Birchwood Airport Master Plan
Project Guide

August 2001

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Project Guide

Prepared for:

State of Alaska
Department of Transportation
and Public Facilities
4111 Aviation Drive
Anchorage AK, 99502

Prepared by:

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Anchorage, Alaska 99503

August 2001

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1.0 Project Guide Distribution and Updates

1.1 Purpose of the Project Guide

This project guide is a project-specific document intended to be a communication tool and project team resource. Copies are intended for the use by the project's contracting agency, the Alaska Department of Transportation and Public Facilities (DOT&PF), all HDR team members, and subconsultants. It is the intent that this project guide be used through the duration of the project. The guide is a living document and will be updated periodically as required. Table 1 lists team members who have received copies of this document.

Table 1
Distribution of Project Guide

Project Team Member	Project Guide Issue Date
Mark Mayo, DOT&PF Project Manager	August 2001
John McPherson, HDR Project Manager	August 2001
Duane Hippe, HDR Contract Manager	August 2001
Josh Hedberg, HDR Airport Planner	August 2001
Carla SlatonBarker, HDR Public Involvement	August 2001
Jason Wenger, HDR Engineer	August 2001
Dirk Greeley, HDR Engineer	August 2001
Sally Boggs, HDR Environmental Scientist	August 2001

2.0 Project Background and Description

2.1 Project Description

The Birchwood Airport is a general aviation (GA) airport located approximately 20 miles north of Anchorage and west of the Glenn Highway along Peters Creek. The airport serves a regional role to the Anchorage, Eagle River, Palmer, and Wasilla GA community. The Birchwood Airport is estimated to have more than 56,000 operations per year by private GA aircraft based at the airport, transient GA aircraft, flight schools operating at the airport, and ultralights. The airport has one paved 4,010-foot-long runway, with full-length taxiways on each side. The southern 1,000 feet of taxiway A was recently designated as an ultralight runway, and the southern 2,500 feet of taxiway B was recently designated as a ski/tundra tire runway. Parallel operations are not allowed. Official numbers indicate that there are 160-170 aircraft based at the airport. Unofficial counts estimate that upwards of 350 aircraft are on the airport at certain times. As a result, all lease lot space and tie downs are in use and airspace issues have become a primary concern for airport users. Among the issues the master plan will need to address are:

- Airspace management, particularly regarding the use of ultralights.
- Users' desires for an air traffic control tower.
- The need for additional lease lots and tie-down space.
- Compliance with runway and taxiway safety area standards.
- Pedestrian and vehicle incursions on the runway and other restricted areas.
- Snow removal.

- Potential conflicts with the planned wastewater treatment plant construction adjacent to the airport directly across the railroad line.
- Tree obstructions are located off both runway ends. These obstructions have been of concern in the past. A project has been nominated to the Aviation Project Evaluation Board (APEB) but has not yet been funded.
- The petroleum hydrocarbons and/or hazardous substances from on-site sources may have impacted the airport property;

2.2 Study Purpose

The purpose of this study is to recommend actions to correct safety and capacity deficiencies; identify facilities required to serve existing and future air traffic demand; and develop a phased implementation plan to improve the airport to meet forecasted needs for the next 20 years. Alternative development concepts shall be evaluated and presented to airport users and local residents to identify the preferred development alternative. The following list identifies the main project tasks:

Task 1.0: Project Administration. This task represents activities associated with project startup, such as the development of the work plan, schedule, and project involvement plan.

Task 2.0: Ongoing Public Involvement. The focus of this task is to establish a framework for sharing information throughout the project. It includes subtasks such as the development of a mailing list, Airport Advisory Committee, and website. (Mailing lists are included as attachments to the Public Involvement Plan, discussed in more detail in Section 4.5.)

Task 3.0: Conditions and Needs Assessment. This task is intended to identify issues and alternatives to be addressed in project documents, determine the need for special studies, and identify sources of information. A major deliverable is a report titled "Office Study Technical Memorandum #1."

Task 4.0: Alternatives Development and Analysis. This project task is devoted to developing and evaluating alternatives, with the goal of selecting a preferred alternative. A major deliverable is a report titled "Office Study Technical Memorandum #2."

Task 5.0: Draft Master Plan Development. This task begins Phase II of the project. It involves compiling information from the previous phase and developing the master plan document and airport layout plan.

Task 6.0: Environmental Assessment and Permits. After FAA has reviewed the draft airport master plan, the team will prepare an environmental assessment (EA) according to NEPA and acquire necessary permits. The EA will examine the potential impacts of airport alternatives to determine if any significant impacts will occur.

Task 7.0: Final Master Plan Development. This task represents the final phase of the project and it involves preparing the final master plan and airport layout plan.

3.0 Project Team

Figure 1 presents the project team. Table 2 lists the team members and includes each team member's role, organization and address, phone number, fax number, and e-mail address. Communication between team members should follow the protocols established in Section 4.0.

Figure 1
Birchwood Airport Master Plan
Team Organization

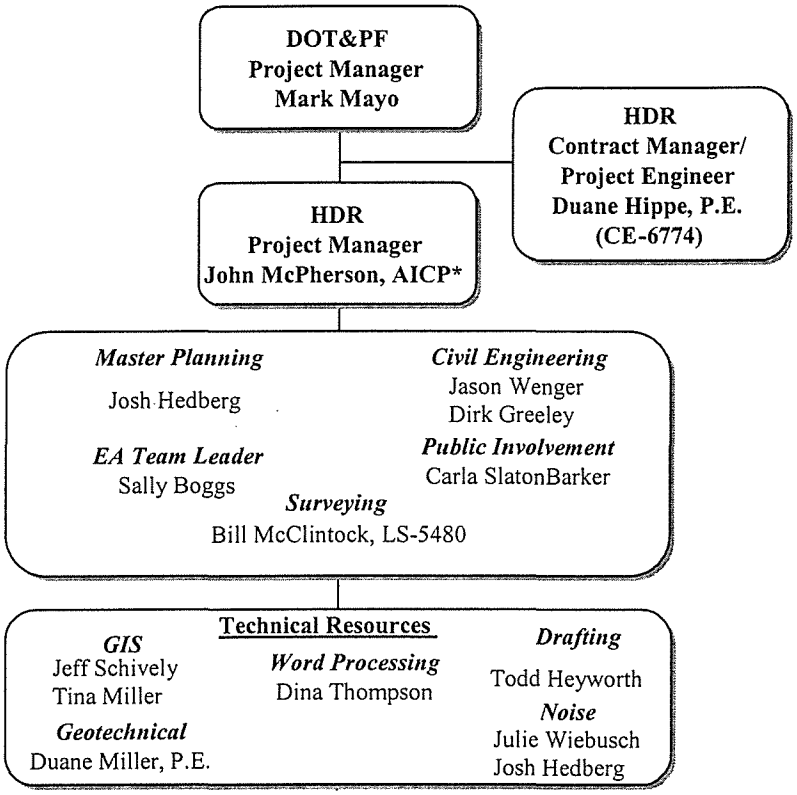


Table 2
Project Team

Name	Role	Organization/Address	Phone	Fax	E-mail
Mark Mayo	DOT&PF Project Manager	DOT&PF Planning Section P.O. Box 196900 Anchorage, AK 99519-6900	269-0519	269-0521	mark_mayo@dot.state.ak.us
John McPherson, AICP	HDR Project Manager	HDR, Alaska, Inc. 2525 C Street, Suite 305 Anchorage, AK 99503	274-2000	274-2022	jmcphers@hdrinc.com
Duane Hippe, P.E.	HDR Contract Manager/ Project Engineer	HDR (same as above)	274-2000	274-2022	dhippe@hdrinc.com
Josh Hedberg	Airport Planner	HDR (same as above)	274-2000	274-2022	jhedberg@hdrinc.com
Jason Wenger, EIT	Civil Engineering	HDR (same as above)	274-2000	274-2022	Jwenger@hdrinc.com
Sally Boggs	Environmental Scientist	HDR (same as above)	274-2000	274-2022	sboggs@hrdrinc.com
Carla SlatonBarker	Planner	HDR (same as above)	274-2000	274-2022	cslatonb@hdrinc.com
Jason Wenger	Airport Engineer	HDR (same as above)	274-2000	274-2022	jwenger@hdrinc.com
Bill McClintock	Land Surveyor	McClintock Land Associates, Inc. 11940 Business Blvd. Eagle River, AK 99577	694-4499	694-8965	bmcclintock@symbolmappingalaska.com
Duane Miller, P.E.	Geotechnical	Duane Miller and Associates 9720 Hillside Drive Anchorage, AK 99516	346-1021	346-1636	73444.2253@compuserve.com
Julie Weibusch	Noise Modeling	Greenbush Group 919 NE 71st Street Seattle, WA 98115	(206) 524-0593	(206-524-0630	juliew@greenbusch.com

4.0 Project Communication

4.1 Communication Protocols

Project-specific communications between the HDR team (including subconsultants) and DOT&PF should generally flow through John McPherson (HDR) to Mark Mayo (DOT&PF). No information will be transmitted to the Federal Aviation Administration (FAA) or for public review without specific direction given by Mark Mayo.

4.2 Documentation of Communication

Project team members should prepare and maintain communication records associated with project activities (including telephone conversations). See Appendix A for communication forms (letter, telephone, memorandum, fax, transmittal) to be used on this project. Project team members should use the memorandum form for correspondence among project team members; the letter form should be used for correspondence with people outside the project team. The letter

form should be used for all correspondence with Mark Mayo, DOT&PF project manager. Communication records should be legible, retrievable, and protected against damage, deterioration, or loss. See Section 10.1 for details on maintaining copies of records in the central file.

4.3 Project Team Meetings

No regular meetings for the project team will be scheduled. John McPherson will represent the project when necessary and as appropriate. Key team members will be asked to attend these meetings to discuss specific issues.

4.4 Confidentiality

All information being collected or developed is considered confidential and is not to be released without approval of the project manager. When information is ready for release it will be carefully reviewed by the HDR management team prior to release. No information will be released without approval by Mark Mayo, DOT&PF project manager.

4.5 Public Relations and Publicity

The purpose of the Public Involvement Plan (PIP), contained in Appendix B, is to ensure that the public and state and federal agencies are informed about the project. The PIP will serve as a guide for gathering information from stakeholders that can be used in project development.

5.0 Scope of Services and Task Assignments

Appendix C presents the project's statement of services. Table 3 presents an overview of deliverables required under this contract. See Appendix C for details.

Table 3
Task Overview Noting Project Deliverables

Phase	Deliverable
Task 1.0 Project Administration	Project Work Schedule Public Involvement Plan
Task 2.0 Ongoing Public Information	Mailing List, including Airport Advisory Committee List Newsletters (four) Project Website Attendance at Anchorage General Aviation System Plan (AGASP) Advisory Committee Meetings (four) and AGASP Public Meetings (two), and Project-Related Community/Agency Meetings (six)
Task 3.0 Condition and Needs Assessment	Kickoff Meeting with FAA and DOT&PF Public Kickoff Meeting Agency Kickoff Meeting and Field Trip Office Study Technical Memorandum #1 (see Appendix C for topics to be covered)
Task 4.0 Alternatives Development and Analysis	Office Study Technical Memorandum #2 (see Appendix C for topic overview, including demand capacity analysis, identification of alternatives, and preliminary evaluation of alternatives) Scoping Plan and Scoping Schedule Environmental Scoping with Agencies and the Public "Notice of Intent to Conduct Environmental Studies" and "Notice of Wetlands

Table 3
Task Overview Noting Project Deliverables

Phase	Deliverable
	Involvement"
	Scoping Summary with Recommendation for Preferred Alternative
Task 5.0 Draft Master Plan	Aerial Photography and Contour Mapping
	Draft Airport Master Plan
	Airport Layout Plan Set
Task 6.0 Environmental Documentation	Draft Environmental Assessment, including Permits (see Appendix C for details)
	Public Hearing or Meeting on Draft EA
	Final EA
Task 7.0 Final Master Plan	Revised Cost Estimate
	Final Master Plan

Table 4 presents the task assignments and hours budgeted for individual team members.

Table 4: Staff Assignments (Phase I)

FIRM: HDR Alaska, Inc.			PROJECT TITLE: Birchwood Airport Master Plan								
PHASE 1			TASK DESCRIPTION: Draft Airport Master Plan							DATE: 4/13/2001	
METHOD OF PAYMENT: FP ☑ FPPE ☐ T&E ☐ CPFF ☐							PREPARED BY: John McPherson				
SUB-TASK DESCRIPTION	LABOR HOURS PER JOB CLASSIFICATION										
	Contract Mgr. (Hippe)	Project Mgr. (McPherson)	Planner (Galligan)	Env. Scientist (Boggs)	Civil Engr. (Wenger)	Public Involve./ Planning (Slaton)	Civil Eng. (Witt)	GIS/Graphic Artist (Baker)	CADD Tech. (Heyworth)	Word Process. (Thompson)	
1.0 Project Administration											
1.1 Project Work Schedule		4				4				16	
1.2 Public Involvement Plan		4				16					
1.3 Contract Administration	8	40								40	
2.0 Ongoing Public Information											
2.1 Mailing List		2	8			16				8	
2.2 Newsletters (4)		12	16			32		32		16	
2.3 Project Website		8	16			40				40	
2.4 Airport Advisory Committee	8	12	32	12		32		16		8	
2.5 Coordination		32	32			40					
3.0 Condition and Needs Assessment											
3.1 Issues Identification		24	24	16		24		16		32	
3.2 Office Studies											
Community Profile		4	16			8					
Socioeconomic Evaluation		12	12			12					
Aviation Facilities Inventory	4	8	20	8	16	20					
Regional Transportation Facilities		2	16		16	8					
Environmental Conditions		4		40							
Noise		2	40								
Wetlands		2		16				8			
Soils		4	16		40			8			
Wind		8	20								
Land Use Inventory		16	16			4		8			
Airport Financial Data		4	12			4					
Aviation Activity		16	16		30					100	
Air Space/Air Traffic Control		4	12		12						
Railroad Engineering Evaluation		8			40		32		16		
Forecast of Aviation Activity		12	40							8	
3.3 Base Maps					20			20	16		
3.4 Field Reconnaissance											
Field Visit		24	16	12	8						
Controlled Aerial Photography	4	8									
Contour Mapping	4	8			8			8			
3.5 Office Study Tech Memo 1		8	24	8		4		24		4	
4.0 Alternatives Development & Analysis											
4.1 Demand-Capacity		24	120		40			24			
4.2 Identify Potential Alternatives	8	40	32		32			16	16		
4.3 Preliminary Alternatives Evaluation		8	16	40	32			16			
4.4 Office Study Tech Memo 2		8	16					16		4	
4.5 Scoping		24	8	16		32		16			
4.6 Preferred Alternative Identification	2	8	8		8						
TOTAL LABOR HOURS	38	404	604	168	302	296	32	228	48	276	0

Table 4: Staff Assignments (Phase II)

FIRM:	HDR Alaska, Inc.			PROJECT TITLE:	Birchwood Airport Master Plan							
PHASE 2				TASK DESCRIPTION:	Environmental Assessment						DATE:	4/13/2001
METHOD OF PAYMENT:	FP ☑	FPPE ☐	T&E ☐	CPFF ☐				PREPARED BY:	John McPherson			
SUB-TASK DESCRIPTION	LABOR HOURS PER JOB CLASSIFICATION											
	Contract Mgr. (Hippe)	Project Mgr. (McPherson)	Env. Planner (Leggett)	Env. Scientist (Boggs)	Civil Engr. (Wenger)	Public Involve. (Slaton)	GIS (Schively)	Graphic Artist (Baker)	CADD Tech. (Heyworth)	Word Process. (Thompson)	Total Hours	
5.0 Master Plan Development												
5.1 Draft AMP	4	20		8	16	40		16		8		
5.2 Airport Layout Plans		32			40	16			32			
5.3 Review of Preliminary Draft AMP		4			8	16	8	8				
6.0 Environmental Assessment												
6.1 Draft EA	2	20		100			32	4		2		
Wetlands Analysis		4	24	8								
Preliminary Site Assessment				8								
Conceptual Stage Relocation Study		2	8	16								
Historical/Cultural Investigation		16	8	40								
404 Permit Application			16						24			
Geotechnical Report		2		40	32		24					
Non-issue Documentation Memo		2	6	6								
Noise		2	6	16								
Agency and Public Correspondence		12				24				8		
6.2 Review of Draft EA												
DOT&PF Review/Respond to Comments		4		8						2		
FAA Review/Respond to Comments		4		8						2		
Public Review Draft	2	4		40			8	8		2		
6.3 Public Hearing		8	8	16		16		8		16		
6.4 Final EA	2	4		32								
DOT&PF Review/Respond to Comments		4		8			8	4		2		
FAA Review/Respond to Comments		4		8						2		
Produce Final EA Document		4		8			8			2		
6.5 Permits and NEPA Process		4	80	8					12	8		
TOTAL LABOR HOURS	10	156	156	378	96	112	88	48	68	54		

Table 4: Staff Assignments (Phase III)

FIRM:	HDR Alaska, Inc.			PROJECT TITLE:	Birchwood Airport Master Plan						
PHASE 3				TASK DESCRIPTION:	Final Master Plan					DATE:	4/13/2001
METHOD OF PAYMENT:	FP ☑	FPPE ☐	T&E ☐	CPFF ☐			PREPARED BY:	John McPherson			
SUB-TASK DESCRIPTION	LABOR HOURS PER JOB CLASSIFICATION										
	Contract Mgr. (Hippe)	Project Mgr. (McPherson)	Planner (Galligan)	Env. Scientist (Boggs)	Civil Engr. (Wenger)	Public Involve. (Slaton)	GIS (Schively)	Graphic Artist (Baker)	CADD Tech. (Heyworth)	Word Process. (Thompson)	
7.0 Final Master Plan											
7.1 Revised Cost Estimate	4	16	24		40			32	8		
7.2 Final Master Plan Document		32	40	24			8	12	12		
DOT&PF Review/Respond to Comments		4	8	4				4		2	
FAA Review/Respond to Comments		4	8	4				4		2	
Produce Final Master Plan Document		4	8	4			8			8	
TOTAL LABOR HOURS	4	60	88	36	40	0	16	52	20	12	0

6.0 Project Schedule

The notice-to-proceed was effective June 16, 2001, and final documents for this assignment are scheduled for completion by July 2003. The basic components and approximate dates of performance for the project are presented in the project schedule included in Appendix D.

7.0 Quality Control Plan

HDR recognizes that quality assurance and quality control (QA/QC) are critical elements of every successful project. HDR's policy promotes prevention rather than detection, and is proactive rather than reactive. It is standard HDR policy to review every deliverable prior to publication or distribution to verify accuracy, clarity, and completeness of the services. Professionals within HDR who will coordinate aspects of project review include: Duane Hippe, P.E., scoping report and ALP set review; and John McPherson, environmental documentation review. See Appendix E for details regarding HDR's quality control procedures.

8.0 Health and Safety

8.1 Assignments

HDR incorporates health and safety practices throughout all stages of project involvement. All project team members shall protect themselves from injury or disease resulting from project activities; furthermore, team members shall carry out their assignments with the health and safety of those involved as their primary concern. Appendix F contains pertinent pages of HDR's Healthy and Safety Program.

The project manager is responsible for verifying that the health and safety issues for HDR employees for each project have been identified and addressed by appropriate personnel. The HDR Safety Officer (Sally Boggs) will advise and assist the project manager in identifying anticipated hazards, developing preventive actions, and communicating these hazards and actions to the project team.

8.2 Identification of Anticipated Hazards

Possible hazards include, but are not necessarily limited to, the following:

- Physical hazards (airplane noise, temperature/climate extremes, slipping, tripping, falling, etc.)
- Hazardous positions (on runways, stream banks, roadways, etc.)
- Pathogen exposure (hepatitis, tuberculosis)
- Water hazards (floatplanes, boats)
- Animal hazards (bears, moose, etc.)
- Other project area/site-specific hazards.

8.3 Preventive Action

HDR will develop actions to be implemented during project activities to eliminate, or minimize, the exposure of the project team and other personnel to anticipated hazards. These may include specific personnel project assignments, safety procedures, monitoring protocols, protective gear (hard hats, safety vests, safety glasses, ear protection, boots, etc.) and emergency and contingency plans and contacts.

9.0 Budget

Table 4 in Section 5.0 presents the time allocation for project tasks for major participating staff. Task leaders should use these allocations in managing their assignments. Although it is the responsibility of the project manager to track hours and evaluate the status of the project budget, task leaders are expected to monitor activities over which they exercise control and work with the project manager to resolve conflicts or budget shortfalls.

9.1 Time Sheet Reporting for HDR Team Members

Table 5 presents the project's charge numbers.

Table 5
Internal Project Charge Numbers

Birchwood Airport Master Plan
GCI/Xerox Code: 204 Job Number: 07072-204-249 Task 01 – Administration Task 02 – Ongoing Public Involvement. Task 03 – Conditions & Needs Assessment Task 04 – Alternative Development & Analysis Task 05 – Expenses

9.2 Invoice Reporting for Subconsultants

Subconsultants can invoice in accordance with the terms of their respective subconsultant agreements. The following project charge numbers have been assigned and should be included on each respective invoice.

Table 6
Subconsultant Project Charge Numbers

Birchwood Airport Master Plan	
Cultural Resource Consultants	07072-205 249
McClintock	07072-206-249

10.0 Project Administration

10.1 *Hardcopy Project Files*

Table 7 lists the project files that will be maintained in HDR's office. It should be noted that all information will be filed in the central files. If a separate copy is needed for field activities, a copy should remain in the file.

Table 7
Master List of Files

	Phase 1 – Preferred Alternative Identification
1.0	Project Administration
1.1	Project Work Schedule
1.2	Public Involvement Plan
1.3	Contract
1.3.1	Contract Negotiations Backup
1.4	Proposal
1.5	Billing Reports
1.6	Budget/Cost Sheets
1.7	Project Guide
2.0	Ongoing Public Information
2.1	Mailing List
2.2	Newsletters
2.3	Project Website
2.4	Airport Advisory Committee
2.5	Coordination
2.6	Meeting Materials
2.7	Correspondence
3.0	Condition and Needs Assessment
3.1	Issues Identification
3.2	Office Study
3.3	Base Maps
3.4	Field Reconnaissance
3.5	Office Study Technical Memorandum 1
3.5.1	Comments on Technical Memorandum 1
4.0	Alternatives Development and Analysis
4.1	Demand-Capacity Analysis
4.2	Airport Development Alternatives
4.3	Preliminary Alternatives Evaluation
4.4	Office Study Technical Memorandum 2
4.4.1	Comments on Technical Memorandum 2
4.5	Scoping
4.6	Preferred Alternative Identification
	Phase 2 – Draft Master Plan & Environmental Assessment (EA)
5.0	Master Plan Development
5.1	Controlled Aerial Photography
5.2	Contour Mapping
5.3	Draft Airport Master Plan
5.4	Airport Layout Plans
5.5	Comments on Draft Airport Master Plan
6.1	Draft Environmental Assessment
6.2	Comments Draft Environmental Assessment
6.3	Public Hearing
6.4	Final Environmental Assessment
6.5	Permits

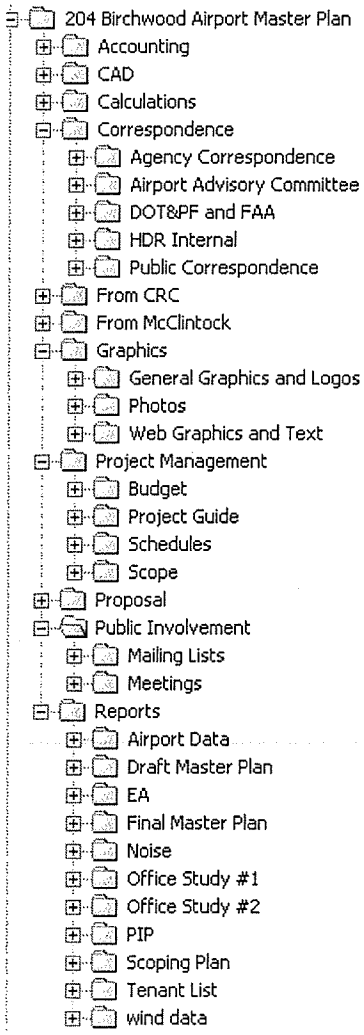
Table 7
Master List of Files (continued)

	Phase 3 – Final Master Plan
7.1	Revised Cost Estimate
7.2	Final Master Plan Document
8.0	Background Data
8.1	Community Data (population, community profiles, surveys, etc.)
8.2	Airport Data (airport activity, forecast elements, etc.)
8.3	Environmental Data (flood info, wildlife & habitat; wetlands, archaeology, etc.)
8.4	Land Status (deeds, maps, etc.)
8.5	Meteorological Data (climate, wind, etc.)
8.6	Geology and Soils
8.7	Noise

10.2 Electronic Project Files

All HDR team members should store in-progress and electronic files on the "Z" drive. Table 8 presents the electronic filing system.

Table 8
Electronic Filing System



11.0 Project Close-Out

The project manager will be responsible for the project close-out. Close-out tasks include the following:

- Close-out Summary
- Lessons Learned
- Marketing Qualification Update
- Document Storage

Copies of all documentation and documents should be placed in the project files and/or electronic files as described in Section 10 and shall be available for archival at close-out.

APPENDIX A

COMMUNICATION FORMS AND COMPANY PROTOCOLS

Notes

Date:

Project:

Subject:

Fax Sheet

HDR

Date

Number of Pages (includes cover page)

Message To

Name	Telecopy number called
Firm	
City	State

If you do not receive all of the pages, please call 907 274-2000 as soon as possible.

From

Name	Department
Telephone	Job Number

HDR Alaska, Inc.

2525 C Street
Suite 305
Anchorage, Alaska
99503-2639

Telephone
907 274-2000
Fax
907 274-2022

Telephone Conversation Record

HDR

Project | Project No.

Time | Date

Call to | Call from

Phone No. | Phone No.

Discussion, Agreement and/or Action

cc:

Transmittal

HDR Alaska, Inc.

2525 C Street
Suite 305
Anchorage, Alaska
99503-2639

Telephone
907 274-2000
Fax
907 274-2022

HDR

Attention _____ Date _____ Job No _____

To _____

_____

_____

_____

Regarding _____

_____

_____

We are sending you: ☐ **Attached** ☐ **Under separate cover via** _____ **the following items:**

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ Other _____

Copies	Date	No.	Description

These are transmitted as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review/comment ☐ Other _____

☐ **For bids due** _____ **19** ____ ☐ **Prints returned after loan to us**

Remarks _____

_____

_____

_____

_____

Copy to _____ Signed _____

If enclosures are not as noted please notify us at once

1.0 PURPOSE

This procedure identifies the requirements and guidelines for originating and maintaining communication records that document project activities, such as transmittals, meeting notes, telephone conversation records, FAXes and other project-related correspondence.

2.0 DEFINITIONS

See Standard Definitions (QAP-003).

3.0 PROCEDURES

3.1 General

Communication records associated with HDR's project activities and services shall be prepared and maintained. These shall be legible, retrievable and protected against damage, deterioration or loss. Requirements and responsibilities for the transmittal, distribution, retention, maintenance and disposition of project communications records shall be documented in the Project Guide.

See Preparation of Project Guides (QAP-005) for more detail. In addition, specific procedures will be developed to address the electronic transmittal and filing of documents.

3.2 Project Communications

3.2.1 Project Transmittals

A listing of documents sent from one HDR office to another HDR office or to any non-HDR project participant shall be recorded on the HDR Transmittal form (see Attachment 1) or on HDR letterhead.

The HDR Transmittal form is available as a preprinted multi-page form and as a Word template. In both cases, the form shall be completely filled out with appropriate project information. If the multi-page form is used, the top (white) copy shall accompany the project documents to the recipient; the middle (yellow) copy can be kept in the working file or used to accompany documents sent to an additional recipient; and the bottom (pink) copy shall go to the

project file. If, instead, the form is generated electronically using the available template, one original and two copies are needed to replace the white, pink and yellow sheets of the multi-page version.

When HDR letterhead is used, the following information shall be included:

- Date
- Job number
- Addressee
- Subject
- Description of documents transmitted
- Action requested or purpose of submittal
- Recipients of copies

3.2.2 Project Meeting Notes

Project meeting notes shall be completed as soon as possible after the meeting and forwarded to all attendees and others as appropriate. This is applicable to internal and external project meetings.

The HDR Meeting Notes form (see Attachment 2) should be used to develop these records. The HDR Meeting Notes form is available as a preprinted page and as a Word template. In both cases, the title block of each meeting record shall be completed in its entirety with the appropriate information. If the recommended form is not used, the meeting notes records shall include the following information, as a minimum:

- Subject
- Project number
- Meeting date/time
- Meeting location
- Attendance - the list of personnel who attended the meeting and the entities that they represent
- Originator of the meeting notes
- Distribution list - personnel who are to receive a copy of the meeting notes in accordance with the Project Guide
- Meeting discussions - concise statements of items discussed during the meeting, including action items

3.2.3 Project Telephone Records

All telephone conversations associated with project activities shall be documented when made by, or received by, HDR personnel to, or from, personnel internal or external to HDR.

The project telephone conversations should be documented on the HDR Telephone Conversation Record form (Attachment 3). The HDR Telephone Conversation Record form is available as a preprinted page and as a Word template. In both cases, the title block of each telephone conversation record shall be completed in its entirety with the appropriate information. If the recommended form is not used, the telephone conversation record shall include the following information, as a minimum:

- Project number
- Subject
- Time
- Date
- Person calling, including the phone number as appropriate
- Person called, including the phone number as appropriate
- Discussion - a chronological list of discussion statements
- Agreements/decisions - a specific statement summarizing agreements/decisions made during the discussion
- Actions - a summary statement outlining actions to be taken

Copies of telephone conversation records shall be distributed in accordance with the Project Guide.

3.2.4 Project Letters

All project letters shall be on HDR letterhead. HDR letterhead is available as preprinted stock and as a Word template. Project letters should follow the recommended format (see Attachment 4) but, if not, the project letters shall contain the following, as a minimum:

- Date
- Addressee
- Project number or file number
- Subject
- Distribution list

Meeting minutes and project progress reports may be considered letters if letterhead is used and the information in paragraph 3.2.2 and paragraph 3.2.7, respectively, is included.

3.2.5 Project Memorandum

Informal correspondence shall be written on the HDR Memorandum form (see Attachment 5) which is available as preprinted stock and as a Word template. This form can also be used to transmit documents, provided that the information in paragraph 3.2.1 is included.

3.2.6 Client Contact Report

All meetings or telephone conversations with clients, or potential clients, shall be documented when associated with non-project activities. The HDR Contact Report form (see Attachment 6) should be used to document the meetings or telephone conversation. The HDR Contact Report form is available as a preprinted page and as a Word template. In both cases, the title block of each contact report record shall be completed in its entirety with the appropriate information. If this form is not used, the report shall include the following, as a minimum:

- Client's name
- Client's address
- Client's phone number
- Persons contacted
- File number
- Date
- HDR employee making the contact
- Contact made in person or by telephone
- Summary of conversation

3.2.7 Progress Reports

Project progress reports shall be documented. The HDR Progress Report form (see Attachment 7) should be used to document progress reports. The HDR Progress Report form is available as a preprinted page and as a Word template. In both cases, the title block of each progress report shall be completed in its entirety with

the appropriate information. If this form is not used, the report shall include the following, as a minimum:

- Project title
- Project number
- Report number
- Date
- For month of
- Invoice number
- Report in the format prescribed by the Project Guide
- Distribution list

3.2.8 FAXes

A listing of documents, or the actual document, sent from one HDR office to another HDR office or to any non-HDR project participant via FAX shall be recorded on the HDR Fax Sheet form (see Attachment 8). The HDR Fax Sheet form is available as a preprinted page and as a Word template. In both cases, the title block of each Fax Sheet form shall be completed in its entirety with the appropriate information. If this form is not used, the FAX cover sheet shall include the following, as a minimum:

- Date
- Number of pages (includes the cover sheet)
- Message to
    - Name
    - Firm
    - Telecopy number called
    - City
    - State
- From
    - Name
    - Telephone
    - Department
    - Job number
- Message or FAX

For each occasion that a FAX is successfully transmitted, a FAX transmittal receipt shall be obtained. This receipt shall be attached to the FAX "original" and filed in the project file. See Filing (QAP-007) for more detail.

3.2.9 E-mail

A hard copy of all project related E-mail sent to any HDR employee or to any non-HDR project participant shall be made and filed in the project file. See Filing (QAP-007) for more detail. Information presented shall include the following, as a minimum:

- From (name)
- To (name)
- Date
- Distribution list
- Subject
- Text

4.0 CROSS REFERENCES

Preparation of Project Guides (QAP-005)
Quality Control Reviews (QCP-001)

5.0 ATTACHMENTS

Attachment 1 - HDR Transmittal Form
Attachment 2 - HDR Meeting Notes Form
Attachment 3 - HDR Telephone Conversation Record Form
Attachment 4 - Recommended Project Letter Format
Attachment 5 - HDR Memorandum
Attachment 6 - HDR Contact Report
Attachment 7 - HDR Progress Report
Attachment 8 - HDR Fax Sheet

APPENDIX B

PUBLIC INVOLVEMENT PLAN

Birchwood Airport Master Plan

Public Involvement Plan

State Project No. 54741
Federal Project No. To be determined

Prepared for:

State of Alaska
Department of Transportation
and Public Facilities
4111 Aviation Drive
Anchorage AK, 99502

Prepared by:

HDR Alaska, Inc.
2525 C Street, Suite 305
Anchorage, Alaska 99503

August 2001

Table of Contents

Attachments

Introduction

The Birchwood Airport is a general aviation (GA) airport located approximately 20 miles north of Anchorage and west of the Glenn Highway along Peters Creek. The airport serves a regional role to the Anchorage, Eagle River, Palmer, and Wasilla GA community. The airport has one paved 4,010-foot-long runway, with full-length taxiways on each side. The Alaska Department of Transportation and Public Facilities (DOT&PF) has established a multi-stepped process to help the Department, the Federal Aviation Administration (FAA), and the community identify, evaluate, and plan airport improvements. The following list identifies the main project phases and tasks:

Phase I:

- Task 1.0: Project Administration
- Task 2.0: Ongoing Public Involvement
- Task 3.0: Conditions and Needs Assessment
- Task 4.0: Alternatives Development and Analysis

Phase II:

- Task 5.0: Draft Master Plan Development
- Task 6.0: Environmental Assessment and Permits

Phase III:

- Task 7.0: Final Master Plan Development

This document, the Public Involvement Plan (PIP) for the Birchwood Airport Master Plan, sets forth strategies for communicating with the public and other interested parties about the project. It defines the tools, timing, and strategies for obtaining public and agency input in each of the project's seven tasks. Major tasks identified as part of the project's approach are listed below followed by detailed descriptions of each public involvement component:

Task 1.0: Project Administration

This task represents activities associated with project startup. The primary public involvement effort under this task is to prepare a Public Involvement Plan (PIP). The PIP details proposed methods for notifying and soliciting information from agencies, organizations, and the public. This document represents the project's PIP.

Task 2.0: Ongoing Public Information

The goal of this task is to establish a framework for sharing information throughout the project. This framework is designed to ensure adequate coordination among team members and local residents, airport users, local government, Native organizations, and other interested parties. To successfully meet these goals, the project team will incorporate the following elements into the overall public participation process.

Public Meetings

The project team will hold public meetings at three key points in the project. The first meeting will be held to announce the project. This meeting will include a presentation to introduce the project and the project's team and to present information gathered to date. It will also provide an

opportunity for people to ask questions about any aspect of the project. Those attending will be asked to comment on airport needs and issues and review material generated to date as part of the office study. The second meeting will occur at the end of Phase I in conjunction with environmental scoping. This meeting will solicit input on the issues and alternatives to be addressed in the environmental assessment (EA), which will be completed in Task 6.0 according to the National Environmental Policy Act (NEPA). The third public meeting will be either a public meeting or a more-formal public hearing (depending on need and requests) and will provide the public with an opportunity to comment on the draft environmental assessment. These meetings are discussed in more detail under "Task 3.0: Conditions and Needs Assessment," "Task 4.0: Alternatives Development and Analysis," and "Task 6.0: Environmental Assessment."

Potentially Affected Interest Identification and Project Mailing List

Another key element of the project's ongoing public involvement effort is the use of a project mailing list to identify and maintain contact with potentially affected interests. See Attachment A for the initial mailing list. This list will be used to distribute project information such as meeting notices and the availability of documents. It will be updated after each public meeting (using sign-in sheets) and upon receiving comments from the public.

Newsletters

At four key points in the project, the team will write and distribute newsletters to convey project information. Each newsletter will be double-sided and 8.5 by 11 inches in size. Each newsletter will be timed to notify people of the three public meetings and to announce the completion of the project. These newsletters will also be posted to the project website. These on-line newsletters will be available easily to people who want additional copies or who want a copy following the official publication date.

Website

A cornerstone of the project's public involvement approach is the use of a project website. The project website will be linked to the DOT&PF website on the World of DOT&PF/Project Information/Public Notices page (www.dot.state.ak.us/external/state_wide/dnc/proj_info.html). The HDR team will design the site and provide DOT&PF with periodic updates to reflect project findings. All reports and newsletters will be posted to the website for the public's easy access. Pages within the website will include the following:

- Project Summary and Contact Information
- Schedule
- Meeting Updates
- Reports and Publications

Airport Advisory Committee

Another public involvement tool incorporated into this project to ensure meaningful dialogue between team members and potentially affected interests is an Airport Advisory Committee (AAC). This group will include representatives from a broad range of airport interest groups such as existing lease lot holders, airport users, community members, Municipality of Anchorage

representatives, and FAA and DOT&PF representatives. We anticipate using the existing Birchwood Airport Association as the foundation of this committee. See Attachment B for a list of the proposed AAC. The function of this group is to act as a sounding board for issues and ideas, and to review draft documents before they are made available to the general public. Meeting dates and locations will remain flexible and will be scheduled to coincide with the review of project reports.

Anchorage General Aviation System Plan Advisory Committee Coordination
As part of another project, the DOT&PF has hired a consultant to prepare the Anchorage General Aviation System Plan (AGASP) and has established the AGASP advisory committee to guide the development of that plan. Because of the overlap of information between the Birchwood Airport Master Plan and the AGASP, both projects will coordinate information with one another, as noted below:

- The AGASP consultant and the Birchwood project team will share information; AGASP, for example, will provide its aviation forecasts to the Birchwood team.
- Birchwood team members will attend up to four AGASP advisory committee meetings.
- Birchwood team members will attend two AGASP public meetings.
- AGASP advisory committee members will be included on the Birchwood project mailing list.

Community Group Coordination
The team will also attend and present information at up to six other community or agency group meetings as needed throughout the project. Groups requesting such presentations could include Birchwood, Chugiak, and Eagle River Community Councils. The team will provide meeting material, such as presentation flip charts or display graphics, comment sheets, and sign-in sheets. The team will also prepare meeting notes to record issues discussed and will have them posted to the project website. The team will also respond to requests for information as needed throughout the duration of the project.

Task 3.0: Conditions and Needs Assessment

This task is intended to identify issues and alternatives to be addressed in project documents, determine the need for special studies, and identify sources of information. The public involvement focus, therefore, is to inform agencies, organizations, and the public about the project and to solicit their feedback on these issues. The team will use the following tools to solicit this information.

Kick-off Meeting with State and Federal Project Sponsors
This task involves meeting with DOT&PF and FAA representatives to identify state and federal concerns. This task has been completed and a summary of issues is included in the project files.

Public Meeting
Proposed for early-October (October 3, 2001), this meeting will provide an early opportunity to inform the public about the project and solicit concerns and perceptions regarding airport needs. The meeting, held in the Birchwood/Chugiak area, will include a presentation and a question and answer session. Meeting notes will be taken, and presentation materials and handouts will be

prepared. This meeting will be advertised in the *Anchorage Daily News* and the *Eagle River Star*, on posters distributed through the community, and in a project newsletter mailed one week prior to the meeting.

Kick-off Meeting with Agencies and Field Reconnaissance Opportunity
Prior to the public kick-off meeting, a special meeting will be held at the public meeting venue with agency representatives. The group will take a field trip to the airport and then return to discuss potential issues and to learn more about the project. Agency representatives will be encouraged to stay for the public meeting, which will follow the afternoon agency meeting. A letter and follow-up phone call will inform agency representatives of the meeting.

Interviews
In many cases, follow-up interviews will need to occur to better define issues. Part of the team's public involvement approach, therefore, is to document conversations with residents and airport users. A brief survey of airport users will also provide another means of collecting information.

Task 4.0: Alternatives Development and Analysis

This project task is devoted to developing and evaluating alternatives, with the goal of selecting a preferred alternative. The following sections discuss the public involvement work associated with this task.

Scoping Plan and Scoping Schedule
The project team will complete a scoping plan prior to beginning Task 4.0. This scoping plan will use the PIP as a framework, but will augment this approach with current information and knowledge of public and agency issues.

Public Scoping Meeting
The team will hold a public meeting in Birchwood/Chugiak as part of environmental scoping. This meeting will have a formal structure, with one team member acting as meeting facilitator, one team member making a presentation, and other team members on hand to answer questions. The meeting will have a set agenda, with time devoted to introductions, an overview of the project and project findings, questions to help clarify the material presented, and a question and answer session. The meeting will conclude with an overview of coming events. Project team members also will be available following the meeting to discuss the project informally and to answer any questions. Poster-sized displays set up around the room will foster dialogue. A blank "white board" and comment sheets will also be available for recording comments and issues. A comment period will occur for a minimum of 14 days following the public scoping meeting. Notices of the meeting will occur through newspaper display advertisements ("Notice of Intent to Conduct Scoping") and through the distribution of the second newsletter.

Agency Scoping Meeting
Coordination with agencies will occur throughout this project to ensure that the project identifies and responds to agency issues and concerns. Dialogue with agencies will occur during the scoping meeting scheduled as part of this task. Following this scoping meeting, communication with agencies will continue as needed via phone and e-mail as the project team develops

information. A comment period will occur for a minimum of 14 days following the agency scoping meeting.

Scoping Summary Report
A scoping summary report will be prepared and placed on the website to document comments received during the scoping process.

Task 5.0: Draft Master Plan Development

This task begins Phase II of the project. It involves compiling information from the previous phase and developing the master plan document and airport layout plan. Public involvement work associated with this task is discussed below.

Draft Master Plan Review
Under this task, the project team will coordinate the review of the draft master plan with FAA, DOT&PF, agencies, and the public. This work will entail the following:

- Write a cover letter and provide mailing labels so that DOT&PF can note the availability of the draft report.
- Provide a draft report to DOT&PF for placement on the project website.

Task 6.0: Environmental Assessment

After FAA has reviewed the draft airport master plan, the team will prepare an EA according to NEPA. The EA will examine the potential impacts of airport alternatives to determine if any significant impacts will occur. Public involvement work involved in this phase is discussed below.

Formal or Informal Consultation During Document Preparation
The determination of impacts will in part result from formal or informal consultation with members of the public, agencies, Native organizations, and other potentially affected interests. All correspondence will be documented for the record.

Public and Agency Review of Draft Document
Once the draft EA is completed, the project team will prepare the draft document for reproduction and distribution by DOT&PF and make the document available for posting to the DOT&PF website. The team will also prepare and distribute the third newsletter to announce the availability of the document for review. Following a public and agency comment period, the project team will prepare and mail written responses to all public and agency representatives that made formal comment.

Public Meeting or Hearing
A minimum of 30 days after the distribution of the draft EA, the team will hold a public meeting (or hearing if requested) to take comment on the draft EA. A comment period of at least 15 days will follow a public hearing. Both the meeting date and the comment period will be advertised in the third project newsletter. Following this comment period, the project team will prepare and mail written responses to all public and agency representatives that made formal comment.

Final Document
The final EA will be placed on the project website and a notice of the document's availability will be mailed to those on the project mailing list. An e-mail announcement will be used for the majority of the list.

Task 7.0 Final Master Plan

This task represents the final phase of the project and it involves preparing the final master plan. Public involvement work associated with this task is outlined below.

Final Document Availability
Under this task the project team will provide a version of the document for DOT&PF to place on the website. The team will also provide notice of the completion of the document in the fourth and final newsletter.

Schedule

The following table contains the schedule of the project's public involvement and scoping activities. This schedule will be updated periodically to more precisely reflect anticipated completion dates of activities.

Schedule of Public Involvement and Scoping Activities

Completion Date	Activity	Sub Activity
	Task 1.0: Project Administration	
08-03-01		Establish Public Involvement Plan
	Task 2.0: Ongoing Public Involvement	
08-03-01		Identify potentially affected interests; create mailing list
Ongoing		Maintain mailing list
08-10-01		Design website
Ongoing		Update website
08-03-01		Identify Airport Advisory Committee (AAC) meeting. Hold AAC meetings, as noted below.
08-03-01		Identify Anchorage General Aviation System Plan advisory committee members for mailing list. Attend AGASP meeting (up to four meetings).
Ongoing		Present information to other groups as requested (up to six meetings). These will likely include presentations to the Birchwood, Chugiak, and Eagle River Community Councils.
Ongoing		Respond to requests for information as needed.
	Task 3.0: Conditions and Needs Assessment	
Summer 2001		Hold kick-off meeting with Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Aviation Administration (FAA).
09-14-01		Administer brief survey of airport users.
09-05-01		Write letters to identified AAC members (select Birchwood Airport Association members and other contacts) asking for their participation at upcoming meeting (10-03).
09-05-01		Reserve room for agency workshop (early afternoon), AAC meeting #1 (late afternoon, and public meeting (evening).

Schedule of Public Involvement and Scoping Activities

Completion Date	Activity	Sub Activity
Draft 09-17 Mailed 9-24		Write and mail newsletter #1 to advertise public meeting.
Published 09-26 and 10-03		Write and place advertisement in *Eagle River Star* and *Anchorage Daily News* for public meeting.
09-26-01		Create and distribute posters in community to advertise meeting.
09-19-01		Place notice of public meeting on the "What's Up" weekly e-mail service.
09-10-01		Write and distribute letter invitations to agencies to attend agency workshop and field reconnaissance trip (held prior to public meeting). Also make reminder phone calls.
10-03-01 afternoon		Hold agency workshop.
10-03-01 late afternoon		Hold AAC meeting #1 to introduce the project and explain the role of the AAC.
10-03-01 evening		Hold public meeting.
10-09-01		Give presentation to the Birchwood Airport Association (community group meeting #1).
October		Interview members of the public and agencies if more information is needed following meetings.
Late October		Provide AAC with copies of the Draft Office Study Report #1 (one to two weeks in advance of meeting).
Early November		Hold AAC meeting #2 to gather comments on draft document.
11-13-01		Give presentation to the Birchwood Airport Association on draft document (community group meeting #2).
November		Finalize Office Study Report #1 and post to the project website.
	Task 4.0: Alternatives Development and Analysis	
February 2002		Prepare draft scoping plan and preliminary scoping schedule.
May 2002		Reserve room for public scoping meeting and AAC meeting #3.
June 2002		Write and mail newsletter #2 to advertise public meeting.
June 2002		Hold issues-based meeting with entire Birchwood Airport Association (community group meeting #3).
June 2002		Prepare and publish in *Anchorage Daily News* a combined "Notice of Intent to Conduct Environmental Studies" and "Notice of Wetlands Involvement" display advertisement.
June 2002		Create and distribute posters in community to advertise meeting.
June 2002		Place notice of public scoping meeting on the "What's Up" weekly e-mail service.
June 2002		Hold public scoping meeting and AAC meeting #3, including at least 14 day comment period.
June 2002		Reserve room for agency scoping meeting in Anchorage.
July 2002		Write and distribute letter invitations to agencies to attend agency scoping meeting, including DOT&PF's "Agency Scoping Letter" questions. Also make reminder phone calls.
July 2002		Hold agency scoping meeting, with at least a 14-day comment period.
July 2002		Hold AAC meeting #4 to discuss selection of preferred alternative.
July 2002		Present alternatives to the Birchwood Airport Association (community group meeting #4).

Schedule of Public Involvement and Scoping Activities

Completion Date	Activity	Sub Activity
	Task 5.0: Draft Master Plan Development	
August 2002		Write cover letter and provide mailing labels to DOT&PF so DOT&PF can mail letters to mailing list noting the availability of the draft report.
August 2002		Provide draft report to DOT&PF for placement on project website.
August 2002		Provide draft document to AAC for review and comment.
		Give presentation to Birchwood Airport Association (community group meeting #5). .
	Task 6.0: Environmental Assessment	
November 2002		Coordinate information and evaluation with agency and public representatives.
December/ January 2002		Schedule and hold AAC meeting #4 to discuss EA findings.
February 2002		Post draft EA on project website and provide notice of availability.
		Give presentation to Birchwood Airport Association if needed (community group meeting #6).
February 2002		Reserve room for public meeting/hearing on draft EA
February 2002		Write and mail newsletter #3 to advertise public meeting and note availability of draft EA.
February 2002		Write and place a display advertisement in *Eagle River Star* and *Anchorage Daily News* for public meeting/hearing.
February 2002		Create and distribute posters in community to advertise meeting.
February 2002		Place notice of public scoping meeting on the "What's Up" weekly e-mail service.
February 2002		Hold public meeting/hearing.
February/ March 2002		Hold at least 14-day comment period
April 2002		Prepare and mail written responses to all public and agency representatives that made formal comment.
June 2002		Post final EA on website, mail notices of availability.
	Task 7.0 Final Master Plan	
July 2002		Hold AAC meeting #5 to present final master plan information such as cost estimates, etc.
July 2002		Provide AAC with final document for review.
August 2002		Post final document on website.
August 2002		Write and distribute newsletter #4.
August 2002		Give presentation to Birchwood Airport Association (community group meeting #7).

Attachment A
Project Mailing List

Birchwood Airport Master Plan Mailing List

Mr/Ms	FirstName	LastName	Company	Address	City	State	Zip
Mr.	John	Abrams		13710 Savage Drive	Eagle River	AK	99577
Mr.	Bill	Ahrens		10719 Katlian Dr.	Eagle River	AK	99577
Mr.	Jim	Anderson		9530 Arlene Drive	Anchorage	AK	99515
Mr.	George S.	Ante		16444 Marcus Street	Eagle River	AK	99577
Ms.	Gal	Avigal		P.O. Box 672116	Chugiak	AK	99567-2116
Mr.	Bill	Bahleda		P.O. Box 1911	Eagle River	AK	99577
Mr.	Mike	Bailey		P.O. Box 670722	Chugiak	AK	99567-0722
Ms.	Debra J.	Bartlett	D /B /A Aircraft Painting Company	8000 Resurrection Drive	Anchorage	AK	99504
Mr.	Edwards	Beeman		P.O. Box 670134	Chugiak	AK	99567-0134
Mr.	Richard	Benner		2111 Farmer Place	Anchorage	AK	99508
Mr.	Dan	Billman		HC01, Box 2525	Glennallen	AK	99588
Mr.	Thomas	Blavka		19741 Old Glenn Highway	Chugiak	AK	99567
Ms.	Mary	Boden	Federal Aviation Administration Real Estate and Utilities Branch	222 West 7th Avenue #14	Anchorage	AK	99513-7587
Mr.	Burton M.	Bomhoff		19239 Ardian Ave	Chugiak	AK	99567
Mr.	Ben	Booher		P.O. Box 672295	Chugiak	AK	99567-2295
Mr.	Glenn	Borders		P.O. Box 878241	Wasilla	AK	99687-8241
Mr.	Mike W.	Bowden		P.O. Box 770097	Eagle River	AK	99577
Mr.	Ken M.	Boze		3501 W. 31st Ave	Anchorage	AK	99517
Mr.	Robert	Brennan		22918 Green Garden Drive	Chugiak	AK	99567
Mr.	John	Bridges		4514 Upper Kogru Drive	Eagle River	AK	99577
Ms.	Carolyn	Brodin	Trails Committee	PO Box 390	Girdwood	AK	99587
Mr.	Bill	Bullard		11469 Mausel Street	Eagle River	AK	99577
Mr.	Con	Bunde		716 W. 4th	Anchorage	AK	99501
Mr.	Larry	Chapman		P.O. Box 92	Palmer	AK	99645
Ms.	Marilyn	Christiansen		16244 Copper Mtn. Circle	Eagle River	AK	99577
Mr.	Bruce	Christle		17937 Pioneer Drive	Eagle River	AK	99577
Mr.	Joseph	Cizek		30545 Eagle River Road	Eagle River	AK	99577
Ms.	Cheryl	Clementson	Anchorage Assembly	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Roger	Cloud		20937 Frosty Drive	Chugiak	AK	99567
Mr.	Charlie	Cobb		P.O. Box 771955	Eagle River	AK	99577
Ms.	Debra	Croghan	Trails Committee	PO Box 390	Girdwood	AK	99587
Mr.	John	Daily		P.O. Box 670801	Chugiak	AK	99567
Mr.	Paul	Degner		P.O. Box 671636	Chugiak	AK	99567
Mr.	Dave	Demboski		P.O. Box 670153	Chugiak	AK	99567-0153
Mr.	Gordon	Dewitt		1705 Stratford Court	Anchorage	AK	99508

Birchwood Airport Master Plan Mailing List

Mr.	Warren F.	Dobson		10330 Stewart Dr.	Eagle River	AK	99577
	Pat	Dolphin		3705 Arctic Blvd., #401	Anchorage	AK	99503
Mr.	Al	Doner		700 E. Glenwood	Wasilla	AK	99654
Mr.	Dick	Dworsky	Heritage Land Bank	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Earl	Ellis		15133 W. Lake Ridge Drive	Eagle River	AK	99577
Mr.	Keith E.	Erickson		P.O. Box 870023	Wasilla	AK	99687-0023
Ms.	Anna	Fairclough	Anchorage Assembly	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Bryan	Fannon	Debra Fannon	7321 Christopher Circle	Anchorage	AK	99507
Ms.	Susan	Fison	MOA Planning Department	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Stephan A.	Franklin		18339 Jamie Drive	Eagle River	AK	99577
Mr.	Tom	Freeman	Federation of Community Councils	9346 Parkview Terrace Loo	Eagle River	AK	99577
Mr.	Matthew	Freeman	Jack Schommer	18727 Danny Drive	Eagle River	AK	99577
Ms.	Jody D.	French		P.O. Box 875788	Wasilla	AK	99687
Mr.	Robert	Fritts		11940 Business Blvd., Ste 202	Eagle River	AK	99577
Mr.	Frank	Furrow		8055 Jewel Lake Road, Apt #2	Anchorage	AK	99502-4254
Mr.	George	Gaguzis	Federation of Community Councils	7100 Old Harbor Rd.	Anchorage	AK	99507
Mr.	Lee	Gavitt		1780 Santa Cruz Ct.	Wasilla	AK	99654
Mr.	Christopher S.	Gill		2618 E. 20th Ave	Anchorage	AK	99508
Mr.	Dick	Gilmet		HC04 Box 9084	Palmer	AK	99645-9501
Mr.	Fredrick C.	Goff		9841 Reliance Drive	Anchorage	AK	99507-4423
Mr.	Floyd	Gori	Eagle River Community Councils	17347 Kahitna Dr.	Eagle River	AK	99577
Mr.	Bryan	Greco		4803 Kenai Avenue	Anchorage	AK	99508
Mr.	Glen	Haasl		P.O. Box 671821	Chugiak	AK	99567-1821
Mr.	Steve	Hager		19608 War Admiral Rd.	Eagle River	AK	99577
Ms.	Susan	Haggerty		20627 Edwards Circle	Chugiak	AK	99567
Mr.	Herb	Hancock	Melanie Hancock	10970 Corrie Way	Eagle River	AK	99577
Mr.	Al	Hand		3430 North Shore Drive	Anchorage	AK	99515-1228
Mr.	Russ	Harmon		P.O. Box 670854	Chugiak	AK	99567-0854
Mr.	Harvey Dennis	Harms		P.O. Box 670071	Chugiak	AK	99567-0071
Mr.	Charles E.	Heckler		12641 Neher Ridge Drive	Anchorage	AK	99516
Mr.	Ralph	Henderson		P.O. Box 670127	Chugiak	AK	99567
Mr.	Donald	Herrick		3441 E. 66th	Anchorage	AK	99507
Mr.	John	Hobson		14333 Terrace Lane	Eagle River	AK	99577
Mr.	Joe	Holland		3640 West Dimond Blvd., Apt #15	Anchorage	AK	99515

Birchwood Airport Master Plan Mailing List

	Terry C.	Holliday	D /B /A Holliday Aircraft Services	P.O. Box 670109	Chugiak	AK	99567-0109
Mr.	Eric	Holmberg		18442 Jude Island Circle	Eagle River	AK	99577
Mr.	Chris	Hooten		P.O. Box 670445	Chugiak	AK	99567-0445
Mr.	Alfred	Hummel		22908 Northwoods Drive	Chugiak	AK	99567
Mr.	Eric E.	Johnson		P.O. Box 77-0011	Eagle River	AK	99577-0011
Mr.	Robert	Johnson		P.O. Box 671975	Chugiak	AK	99567
	Dave	Johnson		P.O. Box 670594	Chugiak	AK	99567-0594
Ms.	Valerie Aron	Jokela		P.O. Box 670046	Chugiak	AK	99567-0046
Mr.	Ralph	Jokela		1830 East Parks Hwy, Suite A-113, PMB 661	Wasilla	AK	99654
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Mr.	Tim	Jones		P.O. Box 670655	Chugiak	AK	99567-0655
Mr.	Brad	Karth		23023 Green Garden Drive	Chugiak	AK	99567
Mr.	Ken	Kastner	Allen Wallinder, Kenny Ashby, Davic	P.O. Box 770082	Eagle River	AK	99577-0082
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Mr.	Kenneth L.	Knecht	Bob Adams	P.O. Box 770415	Eagle River	AK	99577
Ms.	Shirley	Kosto		P.O. Box 670509	Chugiak	AK	99567
Mr.	Robert	Kuersten		P.O. Box 670295	Chugiak	AK	99567-0295
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	Dane E.	Larsen		25865 S. Imperial Drive	Eagle River	AK	99577
Mr.	Danny	Larson		23612 Chandelle Drive	Chugiak	AK	99567-5562
Mr.	Drexel	Larson		11360 Hideaway Trail	Anchorage	AK	99516
Mr.	Jeff D.	Latta		P.O. Box 871585	Wasilla	AK	99687
Mr.	Jack M.	Laub		P.O. Box 82	Willow	AK	99688
Mr.	James	Lavery		P.O. Box 91757	Anchorage	AK	99509-1757
Mr.	Mike	Legler		20610 David Ave	Eagle River	AK	99577
Mr.	Marty	List	John Emmi	23105 Myrtle Drive	Eagle River	AK	99577
Mr.	Richard A.	Lochner	Lochner Family LTD Partnership	10593 Sun Beau Drive	Eagle River	AK	99577
Mr.	Dave	Lundeby	Airport Aviation	PO Box 196650	Anchorage	AK	99519-6650
Ms.	Deborah	Luper	Eagle River Community Councils	P.O. Box 771757	Eagle River	AK	99577
	Pat	Mahoney	Tim Mahoney	16820 Easy St.	Eagle River	AK	99577
Ms.	Donna	Manner	Birchwood Community Councils	P.O. Box 771032	Eagle River	AK	99577-1032
Mr.	Scott	Marcy		16703 Yellowstone Circle	Eagle River	AK	99577
Ms.	Ashley	Marquardt		P.O. Box 873632	Wasilla	AK	99687
	Audrey	Mason		20510 David Avenue	Eagle River	AK	99577
Mr.	Dennis	Mattson		18529 Rouse Circle	Eagle River	AK	99577
Mr.	Gary L.	McDaniel		P.O. Box 874163	Wasilla	AK	99687-4304

Birchwood Airport Master Plan Mailing List

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Mr.	Rodney M.	Miland		P.O. Box 670184	Chugiak	AK	99567-0184
Mr.	Mike	Miller	Portage Valley Community Council	PO Box 949	Girdwood	AK	99587
Mr.	Dave L.	Miller		9826 Gravina Circle	Eagle River	AK	99577
Ms.	Sharon	Minsch	Chugach Community Councils	P.O. Box 671350	Chugiak	AK	99567-1350
Mr.	Dave	Mitson		22611 Oak Knoll Drive	Chugiak	AK	99567
Mr.	David	Mock		8948 E. Decatur Street	Mesa	AZ	85207
Mr.	William	Momblow		10211 Baffin St.	Eagle River	AK	99577
Mr.	Vince	Morrison		223 West 23rd Ave	Anchorage	AK	99503
Mr.	Tom	Nelson	MOA Planning Department	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Hank	Nichols		13721A Malaspina	Eagle River	AK	99577
Mr.	Patrick M.	O'Hare		3150 Escondido Ave.	Wasilla	AK	99654
Mr.	John	Olofsson		9437 Hiland Road	Eagle River	AK	99577
Mr.	Toy	Owen Jr.		17719 Teklanika	Eagle River	AK	99577
Mr.	David	Paperman	Community Councils Center	401 E. Northern Lights Blvd.	Anchorage	AK	99503
Mr.	Wally	Parks		P.O. Box 671068	Chugiak	AK	99567-1068
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Mr.	Dwight	Pollard	Chugach Community Councils	P.O. Box 770628	Eagle River	AK	99577-0628
Mr.	Al	Poston		10611 Sanford Circle	Eagle River	AK	99577
Mr.	Thomas J.	Prunty		P.O. Box 670853	Chugiak	AK	99567
Mr.	Gary Wayne	Quarles		P.O. Box 1085	Barrow	AK	99723
Ms.	Caryn	Rea	Turnagain Arm Community Council	HC52 Box 8610	Bird Creek	AK	99540
Mr.	Mark	Rhodes		148 Burton Street	Anchorage	AK	99504
Mr.	AL	Roberts		19131 Twenty Grand Rd	Eagle River	AK	99577
Mr.	Maurice	Robinson	Girdwood	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Allen	Rohde		13135 Old Glenn Highway, S	Eagle River	AK	99577
	Regi	Roorda		20516 Lucas Ave	Eagle River	AK	99577
Mr.	Phillip	Roper		P.O. Box 670209	Chugiak	AK	99567-0209
Mr.	Brent	Rose		7526 Old Harbor Rd.	Anchorage	AK	99504
Mr.	Dwayne	Schuldt	Trails Committee	PO Box 390	Girdwood	AK	99587
Mr.	Gordon	Scott	Turnagain Arm Community Council	HC52 Box 8760	Indian	AK	99540
Mr.	Kerry	Seifert		19967 South Birchwood Loc	Chugiak	AK	99567

Birchwood Airport Master Plan Mailing List

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Mr.	Tony	Shandy	Virginia Shandy	19936 Weeping Birch	Chugiak	AK	99567
Mr.	Ray	Sharp		12305 Center Street	Eagle River	AK	99577
	Cecil R.	Shuman	D /B /A C-Air	27339 Golden Eagle Ct.	Chugiak	AK	99567
Mr.	Ron	Silva		6270 Magnaview Drive	Eagle River	AK	99577
Mr.	Glenn	Sisson		2525 Aspen Street	Anchorage	AK	99517
Mr.	Don	Sisson	Kay Sisson	P.O. Box 670707	Chugiak	AK	99567-0707
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Mr.	Dan	Sullivan	Anchorage Assembly	3400 Sagan Circle	Anchorage	AK	99517
Mr.	Phillip A.	Summers		1269 Summit Drive	Fairbanks	AK	99712
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Mr.	Allan	Tesche	Anchorage Assembly	1032 G Street	Anchorage	AK	99501
Mr.	Floyd	Tetpon		18321 Baranof	Eagle River	AK	99577
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Mr.	Ed	Thompson	Lorayne Thompson	10135 Raven Crest Circle	Eagle River	AK	99577
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Mr.	Dick	Tremaine	Anchorage Assembly	PO Box 196650	Anchorage	AK	99519-6650
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Ms.	Fay	Von Gemmingen	Anchorage Assembly	2132 Arlington Drive	Anchorage	AK	99517-1367
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Mr.	David	Whisnant		2435 Hiland Road	Eagle River	AK	99577
Mr.	Theodore F.	White		18927 Man O War	Eagle River	AK	99577
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Birchwood Airport Master Plan Mailing List

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Mr.	Joe	Williamson		23211 Green Garden Circle	Chugiak	AK	99567
Mr.	Thomas Henry III	Wilson		4830 Sportsman Drive	Anchorage	AK	99502
Mr.	Sam	Wood		19829 Second Street	Eagle River	AK	99577
Mr.	Max	Woodcock		761 Highview Drive	Anchorage	AK	99515
Mayor	George	Wuerch	Municipality of Anchorage	PO Box 196650	Anchorage	AK	99519-6650
Mr.	Arthur	Yarbrough		P.O. Box 670462	Chugiak	AK	99567
Ms.	Trish	Youderian					
			Alaska Wing Civil Air Patrol	P.O. Box 6014	Elmendorf AFB	AK	99506
			Birchwood Hangars Association	P.O. Box 231445	Anchorage	AK	99523-1445
			Birchwood Partners	P.O. Box 672043	Chugiak	AK	99567
			Eldridge, Walsh and Wilson	7141 Crooked Tree Drive	Anchorage	AK	99516
			Greiner Force, Inc.	P.O. Box 770251	Eagle River	AK	99577
			Inlet Petroleum Company, Inc.	459 W. Bluff Drive	Anchorage	AK	99501
			J&M Hangar LLC	P.O. Box 770031	Eagle River	AK	99577
			John Air Aviation, Inc.	P.O. Box 1070	Homer	AK	99603
			Meyer's Aircraft Services	P.O. Box 210210	Anchorage	AK	99521-0210
			Suburban Propane, LP	P.O. Box 206	Whippany	NJ	07981

Attachment B
Airport Advisory Committee Mailing List

APPENDIX C

STATEMENT OF SERVICES

Birchwood Airport and Girdwood Airport Master Plans

Statement of Services

Department of Transportation and Public Facilities
Central Region Planning
April 30, 2001

INTRODUCTION BIRCHWOOD

Birchwood Airport is a nontowered General Aviation (GA) airport located approximately twenty miles north of Anchorage, two miles west of the Glenn Highway. Due to the existence of several other aviation facilities in the greater Anchorage area, military and civilian, the management and capacity of local airspace is of concern. Airport users have requested the installation of an air traffic control tower. This busy airport is the site of considerable pilot training activity. It has a single paved 4,000' x 100' runway. Nearly all of the approximately 250 aircraft based at the airport are single-engined with gross weights of less than 6,000 pounds, but helicopters and ultralights also operate at the airport. A 1,500' x 50' portion of a taxiway has been designated for use as a runway by ultralight and ski/tundra tire equipped aircraft. All available lease lots (36) and tie downs (144) are occupied. Pedestrian and vehicular incursions occasionally occur on the runway and other operational areas. Snow removal is also a seasonal concern. An airport master plan was last prepared for this airport in 1986.

Birchwood airport is owned and operated by the State of Alaska Department of Transportation & Public Facilities.

The purpose of this study is to recommend actions to correct safety and capacity deficiencies; identify facilities required to serve existing and future air traffic demand; and develop a phased implementation plan to improve the airport to meet forecasted needs for the next twenty years. Alternative development concepts shall be evaluated and presented to airport users and local residents to identify the preferred development alternative.

The project shall be accomplished in accordance with the following Statement of Services. The project shall produce three stand-alone documents: an Airport Master Plan, an Environmental Assessment (EA), and an Airport Layout Plan (ALP) set. All work products, with the exception of the Part 77 Drawing and the Airport Property Plan, shall reference dimensions in both English and metric (SI) units. All dimensions shall be shown in English on the Part 77 Drawings and the Airport Property Plans.

PHASE 1 PREFERRED ALTERNATIVE IDENTIFICATION

Project Startup and Administration Phase

1.0 Project Administration

Task 1.1 Project Work Schedule

The Contractor shall develop and maintain a Project Work Schedule. This work schedule shall be submitted within five working days after receipt of the original Notice to Proceed for approval by the Contracting Agency. This work schedule shall show the order and duration of the required activities and tasks. The schedule shall be in a graphical or narrative format with expected completion dates for each activity and task. The Contractor shall immediately notify the Contracting Agency if delays are encountered or anticipated. The Contractor shall submit updated project work schedules for approval by the Project Manager on demand.

Task 1.2 Public Involvement Plan

Within five working days of the Phase I Notice to Proceed, the Contractor shall prepare and submit a public involvement plan (PIP) and schedule as part of the work schedule. The PIP shall detail proposed methods for notifying and soliciting information from agencies, organizations, and the public. Should the schedule require revisions, the Contractor shall revise the plan as directed by the Contracting Agency and resubmit the plan for acceptance within two working days of receipt of comments.

Task 1.3 Contract Administration

The Contractor shall monitor the progress of the work to ensure that activities stay on schedule, within budget, and within the approved scope of work. If any activities begin to fall behind schedule, or if additional work is identified that must be added to the contract, the Contractor shall notify the DOT&PF Project Manager immediately and recommend appropriate actions to be taken. These efforts shall include the continuous tracking of schedules, budgets, and products; coordination with SUBCONSULTANTS relating to work in progress; and coordination with the DEPARTMENT.

The contractor and appropriate team members shall meet regularly with the DOT&PF Project Manager (at least every other week) to discuss the project's progress. The Contractor shall identify problems that could cause scheduled activities to be late, suspended, or significantly accelerated, and explain what corrective actions are possible to keep the project on schedule, within scope, and within budget.

2.0 Ongoing Public Information

The Contractor shall take steps to ensure adequate public participation throughout development of the project. Project objectives and development shall be coordinated with the needs and concerns of local residents, airport users, local governmental units

and the public at-large. In addition, coordination with native organizations (i.e., village and regional corporations, traditional councils, etc.) shall be established.

Public participation, including community representatives, native corporations, and users, shall be initiated at the earliest practical time and continued throughout the development of the proposed project. The objective is to identify and to discuss all concerns before a preferred alternative is selected. The program shall be tailored to the specific needs of the community, but shall include three public meetings, including: (1) Phase 1 informational meeting in the community during the reconnaissance trip after the completion of the office study; (2) Phase II informational meeting in the community after the selection of a preferred airport alternative; and (3) Phase III Public Hearing in the community to comment on the draft Environmental Assessment (EA) (may not be required).

The Contractor shall conduct the technical presentations of all public involvement. The Contractor shall attend public meetings as necessary to provide status reports on the project.

Task 2.1 Mailing List

The Contractor shall develop and maintain a current Project Mailing List of all agencies, organizations, aviation interests, and individuals with an interest in the airport. The list may include local residents, business and property owners. The Project Mailing List shall contain, but not be limited to, the appropriate points of contact for the FAA, the Municipality of Anchorage, Regional and Local Native Corporations, Local Tribal Government, the Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Public Health Service, U.S. Army Corps of Engineers, Office of the Governor - Division of Governmental Coordination, Alaska Department of Natural Resources, Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, the Alaska Airman's Association, air carriers, air taxi operators, and airport leasees. The mailing list shall be reviewed and approved by the Department of Transportation & Public Facilities (Contracting Agency) Project Manager before any mailings occur. The Contractor shall provide mailing labels from this list.

Task 2.2 Newletters

At four key points during development of the airport master plan to be identified by the Contractor and approved by the Contracting Agency, the Contractor shall prepare and distribute a one sheet double-sided, 8.5 x 11 inch project flyer to all parties on the most current version of the mailing list. The flyers shall provide information regarding the status and schedule of the project, a brief discussion of issues identified through public and agency involvement, and appropriate graphics. The Contractor shall submit a draft of each flyer to the Contracting Agency for review prior to distribution. The Contractor shall make any necessary revisions before reproducing and distributing the flyer.

Task 2.3 Project Website

The consultant shall establish and maintain a project website that can both keep the public informed of the latest developments (in the Master Plan/EA or Categorical Exclusion (CE) process) and be used to record their comments. The Master plan project web pages should be linked to the ADOT&PF Website on the Project Information / Public Notices page. The site will continue to be maintained by the CONSULTANT and updated as the project moves forward. To the extent possible, the distribution of documents for the public will be done electronically from the web site.

Task 2.4 Airport Advisory Committee

The Contractor, in consultation with the Contracting Agency shall establish an Airport Advisory Committee (AAC) to bring together representative interests from Contracting Agency and the Contractor's staff, air carriers, and existing lease lot holders. The committee shall form the focal point for the sharing of information. The Committee shall be made up of approximately eight members including the Contracting Agency, Contracting Agency airport manager, FAA Airport Planner, representatives of the Municipality of Anchorage, representatives of airport users, and a member of the community at large. Meetings shall be in person or via teleconference. Meeting dates and locations shall remain flexible and shall be scheduled to coincide with review of project milestones. The AAC shall participate in the review of draft work products.

Task 2.5 Coordination

The Contractor shall coordinate the master plan development and environmental assessment with the Anchorage General Aviation System Plan (AGASP). The contractor shall attend up to 4 AGASP advisory committee and 2 public meetings. AGASP committee members shall be added to the project mailing list. Project deliverables and project meetings will be coordinated with AGASP activities. Specific coordination between planning efforts will include schedule, work products, and information sharing. The key points of coordination will occur during aviation forecasting; alternatives development; selection of the preferred alternative.

Coordination with other individuals and groups is also anticipated. The contractor will attend up to 6 other community/agency coordination meetings with entities (municipal planning staff, planning commission, community council etc.) interested in the project and all meetings of the established Birchwood Airport advisory committee. The Contractor shall notify the DOT&PF Project Manager or designee of all meetings with agencies, organizations, or individuals, at least two working days in advance. Prior to such meetings, the Contractor shall discuss the agenda for the meetings with the DOT&PF Project Manager or designee to ensure that no inappropriate or incorrect information is disclosed. The Contractor shall record all meeting and telephone conversations concerning the proposed project on a format approved by the Contracting Agency.

3.0 Condition and Needs Assessment

Task 3.1 Issues Identification

The purpose of the issues identification task is to solicit views of agencies, organizations, and the public and to inform these groups of the proposed master planning project and the project development schedule. The process shall identify issues and alternatives to be addressed in the master plan and EA, determine the need for special studies, and identify sources of information.

a. Kickoff Meeting. The Contractor shall meet early in the project with the Contracting Agency, Contracting Agency staff, and representatives of the FAA planning and programming staff, to identify the issues and concerns of the State and FAA. In addition, a work session shall be held in agencies and other groups to discuss the project and inform interested parties of the project scope and schedule.

b. Public Meeting. The Contractor shall conduct a public meeting in the community to inform the public about the planning effort, and solicit concerns and perceptions with respect to airport needs. The Contractor shall organize the meeting; notify local councils and native corporations, responsible agencies, and the public of the meeting date, place, and time; advertise the meeting in the local media; provide an interpreter of the local native language if requested to do so by the City or Borough; reserve facilities; prepare the agenda; make oral presentations; provide presentation graphics; compile a list of attendance; respond to questions and requests for additional information; provide comment sheets for written comments; and prepare a written summary of each meeting. The Contracting Agency shall approve all notices before publication and approve the time, date, and location of the meetings.

c. Agency Field Trip. The Contractor shall provide the opportunity for an agency field trip to project site.

Task 3.2 Office Study

This study shall be finalized after completing the field reconnaissance trip. The study shall address the following items:

a. Community profile. Research and describe characteristics of the community such as location and regional setting, historical background, government structure, economy, community facilities, development plans and planned land uses in the areas of possible airport development, solid waste generation and disposal, and transportation facilities.

b. Socioeconomic Evaluation. Key socioeconomic characteristics associated with air transportation demand shall be compiled and analyzed. The roles of air and other transportation modes shall be discussed and compared to the level of air service offered to local users. Population forecasts for the three stages of airport development (2006, 2011, and 2021) shall be developed based on current trends and projected

growth. Seasonal fluctuations in population shall also be taken into consideration. Particular attention shall be given to the trends in the tourism industry and whether these trends shall affect the local economy and demands on air transportation service.

c. **Aviation Facilities Inventory.** The Contractor shall prepare an inventory of the existing facilities, including an on-site inspection of the airport and the vicinity. The Contractor shall hold interviews with key individuals involved with the operation and use of the airport, such as Contracting Agency personnel, airport maintenance staff, residents, and members of the aviation industry. The most recent airport drawings, maps, and photographs shall be acquired for use in developing an inventory of the existing airport facilities such as its background and history; runways and aprons; lighting, marking, and signs; buildings; aviation fuel and aircraft services; utilities; ground access, circulation, and parking; air traffic management; and airport expenditures and revenues.

d. **Regional Transportation Facilities**. Information regarding other modes of transportation and transportation facilities within the region shall be collected and evaluated for their relationship to the airport.

e. **Environmental conditions of the airport and its immediate environment.** The Contractor shall research and describe existing soils and materials sites, climate and meteorology, topography and potential obstructions, wetlands, noise, vegetation, wildlife, air quality, water and hydrology, solid waste generation, toxic material disposal, floodplains, and parklands and recreational areas. Regarding wind data, the Contractor shall coordinate with the FAA, the Climate Center at the University of Alaska Anchorage, and other possible sources to obtain available wind data. The data collected shall be used to develop a wind rose as described in FAA Advisory Circular (AC) 1500/5300-13, Appendix #1. Detailed technical appendices for the following topic areas are proposed:

Noise. Based on the aviation activity inventory of operations and aircraft type, baseline noise exposure maps shall be developed using the latest version of the FAA Integrated Noise Model. Noise contours shall be developed for the existing condition. The noise exposure maps shall be developed in accord with Federal Aviation Regulation (FAR) part 150 and AC 150/5020-1, "Noise Control and Compatibility Planning for Airports." On-site noise monitoring and calibration of the noise model are proposed as optional additional services.

Wetlands. A map, identifying wetland types in the project vicinity, shall be included in the office study. U.S. Fish and Wildlife Service National Wetlands Inventory Maps and other appropriate resources may be used to determine if wetlands exist within the project area. However, if a field wetlands delineation is necessary to determine whether wetlands exist within the affected environment, it shall be done in accordance with the Corps of Engineers 1987 Wetlands Delineation Manual and accomplished by a Contractor who has been formally trained in this method. Field delineation of wetlands is proposed as an optional scope item and would occur during the Phase 2.

Soils. The Contractor shall conduct a thorough review of available geotechnical data for the airport, including data regarding local borrow sources utilized to construct the airport and associated improvements on airport property. The data shall be compiled in a useable form and shall provide the basis for a report of the existing soil and permafrost conditions, including local sources of borrow material and potential problems, such as thaw settlement, high water table, and borrow materials sensitive to wet weather. The data in the geotechnical reports shall be supplemented by information from as-built construction documents. The geotechnical data shall be evaluated and assembled into a brief report.

The report shall also address geologic problems to be expected and how those problems might be addressed. Such problems might include the presence of ice rich soils, a high water table, and usability of local materials. Particular attention shall be paid to depths of overexcavation, typical embankment sections and to subdrainage systems that impact the geotechnical conditions at the airport. The construction records shall be augmented by interviews with Contracting Agency personnel involved with past construction. Properties of materials proposed for use as fill and seasonal constraints on earthwork operations shall be established. The data developed regarding natural subgrade for cut and at-grade sections shall include strength, compressibility, frost susceptibility, and heavy equipment support capacity. Special subgrade construction procedures shall be evaluated for the overlay of permafrost and soft peat deposits, including the use of geofabrics, as appropriate. A soils map shall be developed in a GIS format to be compatible with current Contracting Agency direction in this area. Field sampling and drilling are proposed as an optional scope item. Areas where insufficient information exists may be supplemented with additional soil sampling during field reconnaissance.

Wind Data. The Consultant shall coordinate with the Climate Center at the University of Alaska Anchorage and other possible sources to obtain available wind data. DOT&PF, in consultation with FAA, shall determine whether the available data is adequate for the purposes of the Airport Master Plan. If existing data is determined to be insufficient, the DOT&PF may negotiate with the Contractor for additional data to be collected. The Consultant will install necessary equipment (at a location to be named later as approved by the Contracting Agency) to record wind direction and speed on an hourly basis. The data collected shall be used to develop a wind rose as described in FAA Advisory Circular 1500/5300-13.

f. Land Use Inventory. The Contractor shall identify ownership of adjacent property, existing Contracting Agency rights-of-way, and other land settlement agreements in the project area. Airport lease information and airside land uses shall be inventoried. The Contractor shall analyze surface access patterns to ascertain potential conflicts or hazards. The Contractor shall identify present and future land uses and any existing conflicts on and adjacent to the airport or potential airport sites. The inventory shall be used to help identify issues and constraints to airport development alternatives.

g. Airport Financial Data. Specific financial data and information necessary to provide adequate financial evaluation of any proposed development will be identified. This information will pertain primarily to the following, as it is available:

- Annual financial reports on costs and revenues;
- Current and projected airport operating budgets;
- Capital improvement plans and programs;
- Airport management policies and guidelines;
- Capital improvement projects planned or in progress;
- Operational costs and revenues;
- Airport leases, user fees, and other revenue sources; and
- Airport maintenance agreements.

The Contractor shall identify and obtain relevant financial information from DOT&PF, FAA, and other available sources and put that data in a presentable format.

h. Aviation Activity. The Contractor shall compile information concerning historical and current aircraft operations and forecast future air traffic data for the airport. Relevant data on air taxi, air charter and general aviation shall be collected including enplanements and operations. The Contractor shall contact the FAA, air carriers, air taxi and air charter operators to obtain the most current air traffic data. Data shall also be obtained from relevant individual operators and from the FAA. Available historical air traffic data shall be obtained and evaluated for growth in passenger, freight, mail, and number of operations. Trends in traffic activity shall be evaluated to determine growth rates, changes in aircraft types and frequency of service. Annual operations by specific aircraft type shall be obtained. Special operational features shall also be reviewed, such as increased seasonal activities.

A field data collection program shall be developed to establish a baseline of activity information at the airport. The data collection program shall entail counting aircraft movements at the airport classified by type of aircraft. Counting shall occur during a two-week time period during the winter/spring and a second two-week time period during the summer.

i. Airspace/Air Traffic Control.

The Contractor shall compile an inventory of the existing airspace structure and air traffic control facilities and procedures used at the airport. Conduct interviews with airport management and FAA management personnel to develop a complete description of the air traffic control and airspace structure, which serves the airport. Inventory items will include:

a) Airways and air traffic flight patterns (including typical flight tracks of airport and seaplane operations), various airport operating conditions, aircraft types, and city pair;
b) Navigational aids located within 50 miles of the airport;
c) Airspace conflicts and constraints, including obstruction constraints associated with the terrain surrounding the airport;

d) Applicable instrument approach procedures and current minima;
e) Air traffic control services; and
f) Airspace conflicts and constraints, including obstruction constraints associated with the terrain and structures surrounding the landing areas on the airport, heliport, and on the waterway.

The Contractor shall conduct all necessary interviews and accumulate all required data to develop a comprehensive description of airspace, flight patterns, and traffic control serving the airport and seaplane facilities.

j. Railroad Engineering Evaluation. Contractor shall evaluate the ARRC right-of-way and rail line adjacent to the airport to identify opportunities and constraints to airport expansion. The feasibility of moving or straightening railroad tracks, bridging, etc will be evaluated. Opportunities and constraints identification will be coordinated with the ARRC.

k. Forecast of Aviation Activity. Building on the assumptions and estimates prepared as part of the original airport master plan and coupled with changes in the aviation fleet mix and the aviation industry in general, the Contractor shall prepare aviation demand forecasts (low, mid and high growth scenarios). The Contractor shall develop a regional model for forecasting transportation needs at the airport. Regional information collected shall be analyzed and displayed using GIS. Based on the model and past aviation activity for the airport, the Contractor shall produce new 5, 10, and 20-year forecasts of general, commercial, and military aviation activity.

Task 3.3 Base Maps

The Contractor shall investigate and review background information from existing Airport Layout Plans, Property Plans, previous construction reports and as-built plans, file correspondence, aerial photography, the existing Airport Master Plan (if any), and USGS topographic maps. The Contractor shall produce base maps that shall be used throughout the study. These maps shall be new mapping from Task 1.6(b) where possible. Otherwise, they shall be either enlargements of existing USGS maps or other available data to show the major physiographic features and land contours or adaptations of the Contracting Agency's existing AutoCAD mapping for the airport, or mapping developed during the field reconnaissance phase. These maps shall be used to illustrate each alternative and shall be displayed as full sized visual displays at subsequent public meetings. These maps shall illustrate information identified during the office study, such as existing land uses, terrain units and classifications, political boundaries, transportation systems, airport property lines, location of any existing landfill, sewage lagoon, or transfer stations, and other features as appropriate for each specific application in subsequent reports and the environmental assessment. Base maps shall be produced at a scale and format determined adequate to display the information by the Contractor in consultation with the Contracting Agency. Where possible and appropriate, base mapping shall be done in a Geographic Information System (GIS) compatible format.

GIS services that are beyond the scope necessary to complete the Airport Master Plan shall be identified during base mapping. The Contractor shall coordinate with the Contracting Agency to identify and scope additional GIS support services that facilitate the data and GIS needs of the Department and FAA. The Contractor shall prepare budget and task descriptions necessary to develop the identified GIS needs into a useable format for incorporation into Contracting Agency's ongoing GIS capabilities. Particular attention shall be made to assure that GIS data is compatible with the Airport Inventory Management System being developed by the FAA. The identified GIS mapping services may be conducted with the approval of the Contracting Agency as additional services.

Task 3.4 Field Reconnaissance

a. **Field Visit.** This field reconnaissance is a preliminary assessment of field conditions at the airport. Prior to the field visit the Contractor shall investigate and review background information from Airport Layout Plans, Property Plans, previous construction reports and as-built plans, file correspondence, aerial photography, and USGS topographic maps. Airport development considerations shall include: personal interviews with air taxi operators, FAA and state M & O personnel; wind direction; site topography; approach conditions; and obstructions. General functional considerations include: soil conditions, surface drainage, snow drifting, site access, potential borrow sources, waste excavation disposal areas, and electrical power location. In addition, special attention shall be given to possible hazardous waste contamination from current or discontinued operations.

b. **Controlled Aerial Photography.** The Contractor shall obtain existing (September 2000) aerial photography. Post control points shall be set by survey. This aerial photography shall have vertical control based on mean sea level and be tied to vertical datum existing in the area. This photography shall be used to 1.0-meter contours can be created from the data.

   Post control of the photography may be required. The Contractor shall determine the number, size, and location of the ground control points required for the project in conjunction with the firm performing the aerial photogrammetry. The location of the post control point shall be recorded in such a manner that their horizontal and vertical position can be established.

c. **Contour Mapping.** The Contractor shall develop contour mapping from the aerial photographs to satisfy requirements for completion of the Airport Layout Plan. Based on aerial photography, prepare base maps with one meter contours, or as directed, for the airport at a scale no smaller than (1:1000) for Terminal Area Plans, (1:2000) for Airport Layout Plans and (1:20,000) for Air Space Plans. All mapping shall be produced on a Computer Assisted Drafting (CAD) system compatible with AutoCAD, Version 12 or later.

Task 3.5 Office Study Technical Memorandum 1

The Contractor shall prepare a technical memorandum reporting all findings of the office study, issues identification, and field reconnaissance trip. Forecasts of aviation demand shall be presented. Ten copies of the technical memorandum shall be presented to the Contracting Agency for review and comment. The forecasts prepared for the Technical Memorandum shall be reviewed and approved by the Contracting Agency and FAA prior to developing alternatives in Phase 1C.

4.0 Alternatives Development and Analysis

Task 4.1 Demand-Capacity

a. **Determine Airport Facility Standards.** This task shall identify the standards to which the airport should be developed. The task shall include the design Airport Reference Code to be used and a compiled list of dimensional standards for improvements, including but not limited to: airfield requirements (runways, safety areas, taxiways, lighting, apron areas, and service access); approach area dimensions and requirements for proposed and future approach category; general aviation needs (fixed base operations, aircraft storage, automobile parking, buildings, road access, transient and permanent aircraft parking and tie-down areas); general airport access; circulation and parking standards; other building area and land use requirements (lease lot identification and development); a helicopter aprons; and security fencing.

b. **Demand-Capacity Analysis**. The Contractor shall conduct a demand-capacity analysis of the airport in accordance with AC 150/5070-6A and AC 150/5300. Airside capacity shall be calculated and compared against the aircraft demand forecasts to determine the need and timing of improvements. Based on the forecast of aviation activity, the Contractor shall identify the facilities needed to satisfy aviation demand. This identification process shall require development of air-side, land-side, and non-aviation requirements necessary to meet overall demand. An analysis of air-side requirements based on forecasts, demand and capacity projections, and other applicable data, including primary and potential economic activities, shall be performed. Other requirements, such as instrumentation, navaids, taxiways, lighting, communications, and power-generation facilities, shall be determined, as well as air-side requirements including clearances, grades, and apron requirements, shall be identified where appropriate.

Task 4.2 Identify Potential Airport Development Alternatives

The Contractor shall develop alternate airport development scenarios based on airport facility standards, the demand-capacity analysis, and socioeconomic conditions for each of the three planning periods required by AC 150/5070-6A. Airport alternatives shall be based on reasonable and practical development and shall show necessary

major runway/taxiway and aircraft parking development during the 20-year planning period. The effort shall identify logical requirements for future air carrier, air taxi, cargo, general aviation, and revenue support development for efficient and safe separation of different uses, if necessary. Navigation equipment requiring relocation shall be identified. The Contractor shall confer with state airport management, state aviation personnel, FAA, local pilots and charter operators, and community officials to identify issues, policies, and guidelines impacting alternatives. Included in the alternatives shall be conceptual level designation of terminal areas and airport access. This effort shall result in a series of overall aviation development alternatives for the improvement of the airport. Overview maps showing all airport alternatives in relation to the existing community and existing airport improvements shall be produced.

Task 4.3 Preliminary Alternatives Evaluation

a. Provide a preliminary summary of potential environmental, functional, social, and economic impacts in the form of an Initial Environmental Assessment (IEA). The IEA shall use the results of the Office Study as its community profile. The IEA shall consider all resource impact categories discussed in FAA Order 5050.4A. However, the summary shall only discuss those impact categories where there may be issues and/or controversy. The IEA shall be a chapter of or appended to Technical Memorandum 2.

b. Review other facts such as possible operational impacts of snow and ice, smoke and fog, proximity of sewage lagoons, landfills, and other items as may be appropriate to the particular alternatives under consideration.

c. Estimate site development and maintenance costs. The site development cost estimates should consider problems such as location and availability of construction materials; the location of existing water, sewer, electrical and communication utility lines; soil conditions; and geological features in the vicinity of possible airport alternatives. Maintenance cost estimates shall include labor costs and the initial purchase (if appropriate), annual operation, and periodic replacement of maintenance equipment.

d. Maps showing airport development alternatives in relation to the existing airport improvements and potential environmental constraints shall be produced. Alternatives shall be mapped on the base maps developed in Task 1.5(i).

Task 4.4 Office Study Technical Memorandum 2

The Contractor shall prepare a technical memorandum reporting all findings of the Phase 1C. Ten copies of the technical memorandum shall be presented to the Contracting Agency for review and comment.

Task 4.5 Scoping

a. **Environmental Scoping**: The purpose of environmental scoping is to solicit views of agencies, organizations, and the public and to inform these groups of the proposed project and the project development schedule. The scoping process shall identify issues and alternatives to be addressed in the EA, determine the need for special studies, and identify sources of information. Environmental scoping shall include at a minimum public notices, an opportunity for an agency field trip, Agency and public meetings and/or workshops, and Agency scoping letters. The consultant shall include the "Agency Scoping Questions" questionnaire (Attachment A) with the Agency scoping letters. Information referenced in the "Agency Scoping Questions" questionnaire shall be provided to the agencies. The Phase 1 meetings may be used for the environmental process.

The Contractor shall prepare and submit a draft scoping plan and a preliminary scoping schedule. The scoping plan shall detail proposed methods for notifying and soliciting information from agencies, organizations, and the public. Should the plan require revisions, the Contractor shall revise the plan as directed by the Contracting Agency and resubmit the plan for acceptance within two working days of receipt of comments. Following the Contracting Agency's acceptance of the scoping plan, the Contractor shall initiate the scoping process.

At a minimum, one Agency scoping meeting and one public scoping meeting shall be conducted. The Contractor shall prepare and publish in the Anchorage Daily News, a combined "Notice of Intent to Conduct Environmental Studies" and "Notice of Wetlands Involvement." Meeting Notices shall be mailed to all those on the mailing list. A minimum of two weeks notice of the public meeting shall be provided. Proof of Publication of the required advertisements in the local newspapers must be appended to the EA. The Contractor shall participate in the scoping meetings as directed by the Contracting Agency. The public scoping meeting shall include providing necessary graphics and visual aids, responding to questions and requests for information, and shall be conducted in the preferred open-house format unless otherwise directed by the Contracting Agency. The times, locations, and agendas of the scoping meetings shall be approved by the Contracting Agency. The Contractor is responsible for the scoping schedule development. The Contractor, in coordination with the Contracting Agency, shall be responsible for reserving facilities, moderating the proceedings, providing written transcriptions of the formal meetings, and set up and removal of information and visuals. A minimum fourteen (14) calendar day comment period shall be provided following each scoping meeting.

Task 4.6 Preferred Alternative Identification

Based on the results of Technical Memoranda 1 and 2, the Contractor shall work with the Department to identify a preferred development alternative. The Contractor shall meet with the Contracting Agency, Contracting Agency staff, and representatives of the

FAA planning and programming staff, to identify the issues and concerns of the State and FAA relative to selection of a preferred alternative. In addition, a work session shall be held with agencies and other groups to discuss the project alternatives and to identify agency issues. The Contractor shall summarize all issues and comments received on the development alternatives and make recommendations on a preferred alternative.

PHASE 2 – DRAFT MASTER PLAN & ENVIRONMENTAL ASSESSMENT (EA)

Based on the results of environmental scoping, the Contracting Agency reserves the right to negotiate and add by amendment for services under Phase 2 of the contract.

5.0 MASTER PLAN DEVELOPMENT

Task 5.1 Controlled Aerial Photography

The Contractor shall obtain new aerial photography of the preferred alternative (photography will cover only one site roughly 5,000 feet by 2,000 feet). Photo control points shall be set by survey. This aerial photography shall have vertical control based on mean sea level and be tied to vertical datum existing in the area. This photography shall be flown and controlled so 1.0-meter contours can be created from the data.

Photogrammetric Control panels shall be set and controlled for this task. This data shall be used to obtain topographic data for future projects. The Contractor shall determine the number, size, and location of the ground control points required for the project in conjunction with the firm performing the aerial photogrammetry. The Contractor shall install the control points using 16mm x 762mm rebar and the appropriate panel materials. The location of the panels shall be recorded in such a manner that their horizontal and vertical position can be established. The Contractor shall remove and dispose of all panels surveyed under this contract at the direction of the Contracting Agency.

Task 5.2 Contour Mapping

The Contractor shall develop contour mapping from the aerial photographs to satisfy requirements for completion of the Airport Layout Plan (ALP) of the preferred alternative. Mapping will be conducted only at the preferred site anticipated to roughly an area 1,525 m x 610 m (5,000 feet by 2,000 feet). Based on aerial photography the Contractor shall prepare base maps with one meter contours, or as directed, for the airport at a scale no smaller than (1:1,000) for Terminal Area Plans, (1:2,000) for Airport Layout Plans and (1:20,000) for Air Space Plans. All mapping shall be produced on a Computer Assisted Drafting (CAD) system compatible with AutoCAD, Version 14 or later.

Task 5.3 Draft Airport Master Plan

The Contractor shall prepare a preliminary draft airport master plan to include all work accomplished within the first phase of study. The Contractor shall review comments received during the study process and incorporate them into a preliminary draft Airport Master Plan.

In addition to incorporating all previous work, the Contractor shall add an airport development chapter. The Airport Development chapter shall describe the preferred airport development plan, in report form, complete with a reduced ALP set of drawings. This chapter shall describe the purpose of each drawing.

Task 5.4 Airport Layout Plans

The Contractor shall complete the draft ALP set presenting the proposed and ultimate airport development plans in accordance with FAA AC 150/5300-13 (current edition). The ALP elements are detailed in Appendices 6 & 7 of the AC. Most ALPs include a general plan view of the airport, a plan and profile of each runway, an Airport Airspace drawing, a Runway Protection Zone drawing, a Terminal Area Plan drawing, a Land Use drawing, and an Airport Property Plan drawing. Multiple drawings may be combined on one sheet with the approval of the Contracting Agency and the FAA. The FAA Signature block shall appear on each sheet of the ALP set and shall include the airspace number. The Contractor shall obtain title sheets and borders from Contracting Agency Aviation Design Section through the Contracting Agency.

The Contractor shall submit three half-size copies of the preliminary draft airport master plan and a completed FAA Alaska Region Airport Layout Plan Checklist to the Contracting Agency for review. The Contractor shall make requested revisions and resubmit the checklist and 9 full size copies of the ALP to Contracting Agency for transmittal to FAA for review and approval. If necessary, the Contractor shall make further revisions as necessary to address FAA's comments.

a. **Airport Layout Plan Drawing.** Using the results of the alternative analysis developed in the previous tasks, FAA AC 150/5070-6a and AC 150/5300-13, the Contractor shall prepare the ALP drawing to reflect updated physical features, wind data, and location of airfield facilities (runway, taxiway, navaids, etc.). All dimensions on the Part 77 Drawing and the Airport Property Plan shall be shown in English units. All other drawings shall show dimensions in dual (English and SI) units. Otherwise, basic drafting standards shall be in accordance with the latest revision of the Contracting Agency Aviation Design Drafting Manual. An FAA approval block shall be provided on the ALP.

b. **Airspace Plan and Runway Protection Zones.** The Contractor shall develop FAR Part 77 Airspace and Runway Protection Zone Plans. Plans shall conform to the FAA Alaska Region, AC 150/5300-13, and FAR Part 77, Objects Affecting Navigable Airspace. The Airport Airspace Drawing Depicts the FAR Part 77 imaginary surfaces for the airport. Part 77 imaginary surfaces define navigable airspace. The airspace drawing shows terrain surrounding the airport and

identifies any obstructions to navigable airspace. These obstructions may be topographic features or man-made objects on or around the airport.

Typical man-made features may include man-made facilities such as buildings, power lines, towers, roads, and landfills. This sheet shows natural features such as water bodies and terrain contours. Tree top elevations may be shown if they represent obstructions to navigable airspace. The Contracting Agency shall supply the Contractor with Airspace Drawing examples from similar projects.

c. **Terminal Area Plan.** The terminal area plan shall depict a conceptual level drawing indicating the basic sizing of the terminal area. The drawing shall include a schematic adequate for delineating basic flows of passengers, baggage, cargo, and vehicles. This shall include movement to and from car parking areas or curbside space to aircraft. The concept drawings shall not be so definitive as to preclude important changes that could evolve with the development of detailed plans.

d. **Property Plan Drawing. (Right-of-way and boundary)**

1. **General.** This project shall be surveyed using metric units.

2. **Right of Way and Boundary Objectives.** The Contracting Agency requires the professional services of a Registered Land Surveyor. This surveyor shall assist in the identification, mapping, and acquisition of additional land needed (if any) for the airport. If additional land is to be acquired, the surveyor shall:
   - prepare Parcel Plats and provide technical support for acquisition activities.
   - prepare an Airport Property Plan (APP) which reflects the acquisition and current airport land status.
   - prepare and record a Record of Survey (ROS) based on the existing ROS and field work performed under this contract.

   If there is no additional land needed for the airport, Task 5.4.d Right-of-Way and Boundary shall not be required.

   The Contractor shall provide all professional and technical services necessary to produce an effective APP, Parcel Plats, and ROS. The Contractor shall communicate and consult with the Contracting Agency throughout this process.

3. **Standards.** The Contractor shall perform the services to standards called for in the Alaska State Professional Land Surveyors (ASPLS) Standards of Practice, the California Geodetic Control Committee (CGCC) Standards for Band IV surveys, or the DOT&PF Construction surveying Requirements, as appropriate to the services being performed, unless otherwise specified in the NTP. All studies, reports, and design services shall be performed in

accordance with applicable codes, regulations and standards; professional practice procedures; and commonly recognized construction methods. The Contractor shall not begin surveying for design, or surveying for right-of-way without specific written authorization from the Contracting Agency.

4. **Registration.** All work under this task shall be conducted by, or under, the direct supervision of a Professional Land Surveyor (PLS) holding current registration in the State of Alaska. A registered Land Surveyor currently licensed by the State of Alaska shall be an active field supervisor of the survey crew. The field books, all mapping, parcel plats, and all plans shall be sealed, signed, and certified by the PLS responsible for the accuracy of the work.

5. **Reviews.** Draft documents required under this article shall be submitted to the Contracting Agency for review. The Contractor shall allow three weeks for the return of written comments. The Contractor shall address these comments to the satisfaction of the Contracting Agency before submitting the final documents.

6. **Point Numbering Scheme.** The following point numbering scheme shall be used:

Range	Use
1-100	Primary Control Set (main project traverses)
101-400	Baseline Control (set PIs, PTs, etc.)
401-450	Secondary Control Set (secondary traverses and sideshots with valid elevation)
451-550	Secondary Control Set (secondary traverses and sideshots without valid elevation)
551-600	Recovered Published Hz. Control (NGS, GPS, etc...)
601-1900	Found monumentation/Property corners
1901-2000	Traverse Fly Points (sideshot from two points)
2,001-5,000	Computed/Protracted Points
5,001-20,000	Topo Survey Points
20,001-	Reserved for use by the Contracting Agency

The Contractor shall ensure that point numbers used in this task do not conflict with point numbers used in other survey tasks on this project. Consult the Contracting Agency department to coordinate point numbering and coordinate systems for this project.

7. **Termination of Services.** The Contracting Agency reserves the right to terminate at anytime the Contractor's work. Factors involved in this decision

shall include the timeliness of the acquisition of parcels and the number of revisions necessary to complete the APP.

8. **Research.** Before commencement of the survey, the Contractor shall review any title documents and mapping in the Contracting Agency's possession that the Contractor considers relevant to the boundary location of the respective airport and the land interests at that airport. The Contractor shall be responsible for researching additional relevant documentation from other sources. These documents may include, but are not limited to, the following:

   Bureau of Land Management (BLM) and Department of Natural Resources (DNR) land status plats, BLM township survey plat, Mineral and U.S. Survey plats and field notes, any existing private records of survey, subdivisions, and relevant engineering control surveys, United States Coast and Geodetic Survey (USC&GS)/ National Geodetic Survey (NGS) control diagrams-descriptions, the Contracting Agency's right-of-way records and other easement or boundary documents of record, the Contracting Agency's engineering as-builts, DNR surveys, Title Reports, and aerial photos.

   One legible blueline or photocopy of all of the above referenced reports, plats, notes and other source materials shall be submitted to the Contracting Agency weekly as they are gathered.

9. **Field Work.** Airports with more than one viable site shall require three field trips. A site selection field trip and a design/boundary determination and land acquisition support field trip. A third field trip shall occur once the Master Plan has been accepted, to complete the record of survey monumentation. There is a boundary survey (ASLS 74-131) for the existing Girdwood Airport. If the existing airport is determined to be sufficient for the needs of the community, then the (APP) shall be developed in conjunction with this ASLS survey and the existing APP. If additional lands are needed then a new APP and (ROS) will be required. If a new site is selected then a new APP and ROS will be required.

   A. **Field Task 1 - Survey For Site Selection.** The first field task shall include survey work to tie enough property corners, cadastral corners, and other evidence relating to property interests to develop the preliminary APP (see 5.4.d.12.A). This work shall take place with control for aerial mapping (provided aerial photography is a part of this project). Once a site has been selected, the Contractor shall gather boundary evidence to support the acquisition and mapping of lands in and around the airport. All property corners and cadastral corners needed to accurately define and position the property interests which shall be acquired during this project shall be tied. Any corners within 15 meters of the proposed airport boundary or access road right-of-way which are not shown on the existing ROS shall be tied. All navigable waters and all lakes 20 hectares or larger that are partially or wholly within newly acquired airport lands shall be

meandered. All work shall be tied to the monumented and referenced runway centerline. Any additional data needed to develop an effective APP, ROS, and Parcel Plats shall be gathered at this time. The Contractor shall confer with the Contracting Agency when determining additional survey needs.

The Contractor shall investigate the availability of geodetic control in order to provide NAD 83/92 adjustment latitude/longitude positions at the project site. Geodetic positions for the proposed airport runway centerline endpoints shall be determined. If control is not reasonably (consult with DOT&PF to establish the level of effort considered reasonable), positions shall be computed based upon the NAD 27 record control positions and converted to NAD 83/92 adjustment. Documentation explanation this process shall be required.

B. Field Task 2 - Survey for Boundary Determination and Land Acquisition. After the preliminary survey data has been analyzed and the airport site, access route, and material site(s) have been selected there will be a second field trip. The purpose of this field trip is:

- To gather boundary evidence to support the acquisition and mapping of lands in and around the new airport site
- To gather boundary evidence to identify the termini of the airport access road (note: the access road shall terminate at a public right-of-way or public building)
- To gather ground-based design survey data where material sites are not on the airport site, to locate material sites and gather boundary evidence to support the negotiation of material site and haul road agreements.

All property corners and cadastral corners needed to accurately define and position the property interests affected by the project shall be tied. Ties to the first tier of adjacent surveys within 200 meters of the proposed airport boundary shall be made. All corners within 15 meters of the proposed airport boundary and access road right-of-way shall be tied. All navigable waters and all lakes 50 acres or larger that are partially or wholly within the proposed airport boundary shall be meandered. All work shall be tied to the monumented and referenced proposed runway centerline (see 3.2.3.6). Any additional data needed to develop an effective Final Airport Property Plan – Acquisition Draft (see 4.4.4.2) shall be gathered at this time. The Contractor shall confer with the Contracting Agency when determining additional survey needs. Typically, this field work will take place in conjunction with the design survey (see Tasks 3.2.3.7-8).

All data required for design and land acquisition shall be gathered in a single field trip at airports where the site location is fixed.

C. **Field Task 3 – Survey to Establish New Airport Boundary.** The Contractor shall establish monumentation on newly acquired airport land and to re-establish any missing monumentation on the currently existing airport boundary. A record of survey shall be provided.

10. **Field Books.** The Contractor shall furnish hardbound field books for recording survey information. The books shall become the property of the Contracting Agency after the survey information has been entered and the contract completed. Each book shall be labeled with the project name and an appropriate title, e.g. Horizontal Control, Vertical Control, etc., and shall have an index and comments page. The index page shall reference the contents by page number.

    A. Field notes shall be kept in a neat and orderly fashion. All pages shall be consecutively numbered, showing date, weather, and crew names. All abbreviations used shall be described on the comment page. Sketches are to be used frequently and shall be detailed enough to assist in following the progression of the services. Notes and sketches shall be adequately detailed to convey their intent to a person who is not familiar with the project.

    B. Descriptions of all monuments or other points, recovered or set, are to include the data stamped on the monument and the condition of the monument. A list of all corners searched for, but not recovered, shall be included in the field notes. The DOT&PF Construction Surveying Requirements detail the general note-keeping procedures.

11. **Survey Control Overview.** Establish horizontal and vertical control from existing monuments or from survey control points previously established by the DOT&PF or others (See 5.4.d.9 Field Work). All horizontal and vertical control survey measurements shall be recorded in field books. All measurements and references to section monuments, centerline monuments, and all found property corners shall also be recorded in the field books. Electronic data collection is not acceptable for the above-mentioned measurements. Global Positioning Systems (GPS) control surveys are the only exception.

    A. **Horizontal Control.** The Basis of Bearing shall be the same as that used for 5.4.d.9.A Field Survey For Boundary Determination and Land Acquisition (also see 5.4.d.12.C.7).

        1) Angular measurements: All measurements must be made with an instrument reading directly to 10" or less. Recorded angle sets, at a minimum, will contain a direct and reverse pointing of both the forward angle right and the horizon closure angle. When the difference between a direct and reverse pointing of an angle pair

exceeds 20 seconds (30 seconds for distances of fifty meters or less), that angle pair shall be rejected and remeasured. When the sum of the mean angle right and the mean horizon closure angle differs from 360 degrees by more than twenty seconds (30 seconds for distances of fifty meters or less), that angle set shall be rejected and remeasured. The adjusted angle right (the mean angle right corrected by one half of the difference between the sum of the means and 360 degrees) shall be used for all computations.

2) Auxiliary control points and/or monuments may be side-tied, providing that the point is tied from two traverse points, or tied with two different backsight points (that are closed traverse points). The raw coordinate values for these side ties (calculated from the adjusted traverse coordinates) shall be within 0.03 meters. The final coordinate values for side tied points shall be the mean of the two raw coordinate values or proportionally weighted based on the strength of the observations.

3) All foresights and backsights shall be of the fixed leg type.

4) Distance measurements: All distances shall be measured and recorded in meters (to three places 0.000) and feet (to two places 0.00). Backsight distances will be measured, noted, and recorded also.

5) Closure and Adjustment: All traverses performed for this project shall meet or exceed the standards for Third Order Class I, Traverse Surveys as specified in the ASPLS Standards of Practice. All traverses shall be closed; beginning and ending at known points with an allowable linear error of closure of 1:10,000 or greater. The preferred method of traverse adjustment is by Least Squares Analysis Method.

B. **Vertical Control** shall be based on M.S.L. 1929 NGVD per NGS/NOS/USC & GS surveys, latest adjustment or, in areas with no official control, by tidal observation. Method to be used for tidal observation shall be as directed by the Contracting Agency. If tidal observations are to be used, a minimum of three days of observations shall be recorded, noting the location, date, staff performing the reading, and time of apparent high and low tides. The mean of these readings will be used as Mean Sea Level. Two permanent benchmarks shall be established and tied to this datum. If such control is not reasonably available, an alternative vertical datum shall be developed (consult with DOT&PF to establish the level of effort considered reasonable and to select the alternative datum). Documentation explaining this process will be required.

1) Vertical survey measurements shall meet or exceed the standards for third order leveling as specified in the latest printing of the Federal Geodetic Control Committee's Standards and Specifications for Geodetic Control Networks. The Contractor shall establish a minimum of two permanent benchmarks per approved project site for use through project construction. Utility poles may not be used for TBM's. Project coordinates for all vertical control points, found or set, shall be provided.

C. **Runway Centerline/Project Baseline**. Establish, monument, reference, and use the proposed runway centerline(s) as the project baseline.

[**Explain Stationing**], all as shown on the attached drawing.

Secondary monuments are to be set at each end of each runway centerline. Centerline monuments are to be established approximately 50 meters beyond the thresholds, preferably at an even or a half station. The exact location of these monuments shall be determined in the field in order to provide a position that is stable, protected, visible, and likely to remain intact for the duration of the project construction. The monument caps shall be permanently stamped with the year set, the surveyor's registration number, the project number ([**PROJECT#**]) and the project centerline station. Centerline monuments shall be referenced by two secondary monuments, set perpendicular to the runway centerline(s).

D. **Profile**. Profile shots shall be taken at 25-meter intervals and at major topographic breaks in the existing surface. Additional shots shall be taken at drainages, roads, utilities, and other items pertinent to project design where they cross the baseline(s). The direction (declination corrected magnetic is acceptable) that these features bear shall be noted.

Profile the [proposed or existing] runway [Runway ID1] centerline from station [Beg StaP1] to station [End StaP1].

CROSSWIND

- Profile the [**proposed or existing**] runway [**Runway ID2**] centerline from station [**Beg StaP2**] to station [**End StaP2**].

ACCESS ROAD

- Profile the proposed Access Road centerline from the intersection of the proposed Access Road to the existing **[Street or Road or Public Facility]**.

E. Topographic Survey. Differential leveling techniques shall be used for topographic features whose vertical elevations are critical, such as storm drain system inverts and building entrance/exit areas. Other topographic features shall be survey tied using appropriate data collection methods.

Topographic survey limits shall be:

- The area identified on the attached Exhibit [***A***].
- Runway [Runway ID1] Sta. [Beg Sta1] to [End Sta1] [Dist 1] [left and/or right].

OPTION?/CROSSWIND

- Runway [**Runway ID2**] Sta. [Beg Sta2] to [End Sta2] [Dist2] [left and/or right].

OPTION?/ACCESS ROAD

- Proposed Access Road 10 meters left and right of centerline.

- 15 meters left and right of the centerline of the existing **[Street or Road]** for 20 meters in each direction from the intersection of the proposed Access Road and the existing **[Street or Road or Public Facility]**.

1. Define the existing ground surface sufficiently to generate triangulated irregular network (TIN) within the specified limits. Shots should be taken as necessary; at a minimum, every 25 meters and at major breaks in the original ground within the ground model limits. The Tin limits shall be the topographic survey limits.

2. Locate the edge of trees and identify the approximate average height of trees at the edge.

3. Locate all existing above ground and under ground utilities and attachments (guy wires, pedestals, stand pipes, load centers, runway and taxiway lights, etc.) within the project survey limits. This includes, but is not limited to, power, telephone, fuel lines, water and sewer lines, and cable television. Wire heights shall be determined where proposed or existing roads, taxiways, or other improvements are located.

4. Locate all drainage structures within the survey limits. Record diameter, invert elevations in and out, material, and condition.

5. Locate and describe all improvement features including, but not limited to, edge of pavement, wind cones, fences, signage, rotating beacon, and threshold markers within the surveyed area.

6. Locate and describe any other physical features and conditions, both natural and manmade that could affect the design of the project.

7. Determine location, corner elevations, peak roof elevations and descriptions of all buildings in and within 20 meters of the surveyed area.

8. Locate the first tier of structures lying outside of the proposed airport boundary and within 100 meters of that boundary. (These may be located from aerial photography).

9. Locate all visible utilities within 100 meters of the proposed airport boundary or out to the first tier of above ground structures within 100 meters (see H. above), whichever is less.

10. Locate the limits of any apparent contaminated soils and waters within the project area.

11. All data shall be reduced and field checked prior to the crew's departure from the project community.

12. OPTION?/Lakes as gravel source The lakes within the topographic survey limits are potential materials source sites. The TIN shall accurately represent these lake bottoms. The water surface elevation shall also be determined.

F. Offsite Material Site(s) and Haul Road(s). The limits of offsite material site(s) shall be located. The intersecting and adjacent (within 100 meters) boundaries of the material site parcels shall be located. Haul roads which are not public rights-of-way shall be located. The accuracy required will be commensurate with the level of development in the area – contact ROW Engineering prior to locating the material site(s) and haul road(s).,

12. Triangulated Irregular Network (TIN). A TIN shall be developed for the area within the Limits of Ground Model. This model shall be used throughout the design process. It shall represent the existing ground surface accurately. At a minimum it shall reflect all changes in elevation greater than **[0.5]** meters. The Surveyor shall provide the TIN in an AutoCAD v.14 drawing file. The surface shall be made of 3D faces and the breaklines shall be 3D polylines. A Softdesk v. 8.0 TIN or PacSoft T-NET of the ground modeled area shall also be submitted.

13. Drawings. The Contractor shall provide the following drawings:

A. **Survey Control Diagram**. This drawing shall show control recovered, the basis of bearings, traverse run, points set, points found, and section lines. Traverse lines shall be indexed to the field books. Points shall be labeled with their point numbers. Bearings and distances shall be shown within the accuracy commensurate with the class of the survey being represented, boundary line distances shall be shown from monument to monument. Details of typical primary and secondary monuments set or recovered as a part of this survey shall be required. Size, height above or below ground, relationship of witness post to monument, condition notes, and a sketch depicting cap markings shall be shown. This drawing shall be sealed and contain a certificate of accuracy signed by the Surveyor.

Format: Draft – Bond Paper. Final – A1 Mylar and ACAD .DWG file.

B. **Topographic Base Map(s).** This drawing shall show all topographic features, contours, spot elevations, drainage structure invert elevations, vegetation heights (only vegetation taller than 2 meters), roof elevations of potentially affected structures, above and below ground utilities, wire heights, water surface elevations (include date elevation was observed), areas of contamination, the proposed airport boundary, project runway centerline, proposed road alignment, and project stationing. The contour interval shall be **[Cont Intv 0.5 meters or 1 meter or 2 meters]**. Index and intermediate contours shall be on separate layers. Index and intermediate contour labels shall be on separate layers. Any special items or situations that should be considered during project design shall be described in the notes.

Format: Draft – Bond Paper. Final – A1 Mylar and ACAD .DWG file(s).

C. **Profile Drawing(s).** This drawing shall show the profile of the project baseline and road alignments. The profile shall be gridded and labeled with stations and spot elevations. Drainages, utilities, and roads shall be called out where they intersect the baseline(s). The profile drawing(s) may be included on the Topographic Base Map; provided that this does not crowd the topography.

Format: Draft – Bond Paper. Final – Vellum and ACAD .DWG file(s).

D. **Preliminary Airport Property Plan – Acquisition Draft.** The preliminary APP/AD is the primary land status exhibit. It shall be used to help determine what lands are to be acquired for the project and what survey data is needed to make these acquisitions. The preliminary APP/AD shall be developed after the first field task. It shall show:

1. The location and configuration of all property interests that may affect the location, orientation, or design of the airport and/or access road.

These property interests shall be shown in relation to the proposed airport improvements/locations.

2. The source of these interests shall be identified, e.g., BK 32 PG 17 Bethel Recording District, etc.

3. Section lines, existing or protracted shall be shown.

4. Potential encumbrances, property interests and pertinent improvements that are not of record; such as 55-gallon drums, trails, fuel spills, roads, ANCSA surveys, etc. (items that shall be clearly identified by the aerial mapping do not need to be located at this time) shall be shown.

The preliminary APP/AD shall be submitted no more than 30 days after the first field survey task is complete.

Format: Draft –Bond Paper. Final - A1 Mylar and ACAD:DWG file(s).

E. Final Airport Property Plan – Acquisition Draft. The final APP/AD shall be developed after the second field survey task is complete. This drawing shall accurately tie the boundaries of affected properties and property interests to the airport boundary. Any problems relating to the airport property interests shall be resolved. Bearings shall be local plane bearings as oriented to the mean geodetic bearing of the proposed runway centerline, and distances shown shall be horizontal ground distances. The final APP/AD shall show:

1. The proposed airport boundary.

2. All subdivisions, rights-of-way, easements, roads, and other land interests in and within 100 meters of the proposed airport boundary.

3. The source of these interest shall be identified, e.g., BK 32 PG 17 Bethel Recording district, etc.

4. All navigable waters and all lakes 50 acres or larger that are partially or wholly within the proposed airport boundary.

5. The proposed runway centerline and ties to the proposed airport boundary,

6. Recovered and set property corners, survey control points, and monuments.

7. All parcels to be acquired for this project.

8. All improvements within the proposed airport boundary.

9. The first tier of structures lying outside of the proposed airport boundary and within 100 meters of that boundary. (These may be located from aerial photography).

10. All visible utilities within 100 meters of the proposed airport boundary or out to the first tier of above ground structures within 100 meters (see 9 above), whichever is less.

The APP review checklist shall be completed and an updated copy of it shall be included with each APP/AD submittal. Contact ROW Engineering @ 269-0680 for a copy of this checklist.

Format: Draft – Bond Paper. Final - A1 Mylar and ACAD .DWG file(s).

F. General APP Drawing Requirements.

1. Unless otherwise stated, the format and standards for all drawings shall be according to the DOT/PF Central Region Metric Design Drafting Manual dated August 18, 1998. The manual can be viewed at this site:

ftp://ftp.dot.state.ak.us/pub/dnc/row/central%20region%20drafting%20manual/

For aviation design projects refer to Chapter 6.

ftp://ftp.dot.state.ak.us/pub/dnc/row/central%20region%20drafting%20manual/cr%20drafting%20manual%20rev%20chapter%206.pdf

2. Drawings shall be produced and provided in metric format. Metric units shall be labeled on distances and areas. Conversions shall be based on the U.S. survey foot. Distances shall be shown in horizontal ground meter units with foot units in brackets. Metric distances shall be annotated with the suffix "m". Foot distances shall be annotated with the suffix "'". Foot units shall be further differentiated by using a thinner pen and the text style shall be 15° to the right. Areas shall be annotated with "Ac." For acres, "S.F." for square feet, "ha" for hectares, and "m^2" for square meters.

3. All linework and lettering must be of professional quality and all line widths and lettering sizes shall be of such size that all information can be clearly shown without overlap or confusion. All lettering shall be a minimum size of 2.5mm. Lettering and

linework shall be in the appropriate black drafting ink. AutoCAD style names shall follow the attached Metric Style Chart.

4. Linework shall not run through text. Do not break lines at text; mask the linework using color 155 solids. Solids shall be placed on the same layer as the text that the solid lies under. AutoCAD's "textmask" may be used instead.

5. Details, as necessary, must be shown at an appropriate indicated scale.

6. The drawing shall have a vicinity map, with a scale of 1:50,000 in the upper right-hand corner, showing sections, townships and ranges, boundaries such as national forest or municipal boundaries, and other prominent physical or natural features such as roads, lakes, or rivers. The source of the base map used must also be indicated.

7. The Basis of Bearings shall be stated.

   - For the Preliminary APP/AD, the Basis of Bearings shall be a geodetic bearing between any two recovered primary monuments for which there is a record plat of survey (preferably a NAD 83/92 Adjustment based bearing – see 5.4.d.9.A Field Survey for Site Selection above).

   - For the APP/AD, bearings shown shall be local plane bearings. The Basis of Local Plane Bearings shall be the mean geodetic bearing of the proposed runway centerline. A note explaining how the mean geodetic bearing of the proposed runway centerline was derived shall be shown on the drawing.

8. Bearings and distances must be shown within the accuracy commensurate with the class of the survey being represented, boundary line distances must be shown from monument to monument. Space permitting, there shall be a space in the bearing between the alpha and the numeric portions, i.e., N 45°00'00" E.

9. All drawings are to be prepared electronically in an AutoCAD V.14 compatible format. Drawings are to be accurate models of the data shown, i.e.; a line labeled N 10°00'00" E 104.353m shall be electronically drawn exactly as labeled, a line that as is shown to terminate at a monument symbol shall be electronically drawn with no distance between the endpoint of the line and the center of the symbol, coordinate system integrity shall be upheld (drawing coordinates shall match plane computation coordinates),

etc. All drawings shall adhere to the Central Region D.O.T. Standard layering Scheme. **AutoCAD Drawings which do not adhere to these standards shall be rejected.**

10. Primary and secondary monuments within the airport boundary shall be shown.

11. Details of primary and secondary monuments set or recovered as a part of this survey shall be required. Size, height above or below ground, relationship of witness post to monument, condition notes, and a sketch depicting cap markings shall be shown on all drawings. A "typical" sketch for each type of monument set is acceptable.

12. A standard Contracting Agency north arrow, a legend depicting symbols used, and unit bar scale shall be shown.

13. Standard Notes:

    a) The minimum closure of all traverses, meets or exceeds 1:10,000.
    b) The Basis of Bearings for this survey is between _____ and ___ ___ according to _____.
    c) The bearings shown are local plane bearings as oriented to the basis of bearings, and distances shown are reduced to horizontal ground distances.
    d) Basis of Control Ties and coordinates for these points. (for lat/long, ASP coordinate positions.)
    e) The natural meanders of the ordinary high water line (or mean high water line, where appropriate) of the _____ forms the property boundary as applicable. (Use where appropriate.)
    f) (Other explanatory notes as required.)
    g) The Surveyors Certificate shall read as follows:

SURVEYOR'S CERTIFICATE

I hereby certify that I am properly Registered and Licensed to practice Land Surveying in the State of Alaska, and that this drawing represents a survey made by me or under my direct supervision, and that the monuments shown hereon actually exist as described, and that all dimensions and other details are correct to the extent shown hereon.

_____

Date Registration Number

_____

(name) Registered Land Surveyor

h) The property plan(s) that the new APP supercedes shall be called out in a note placed just above the title block - "This Property Plan supercedes Plan(s) dated _____".

i) Before producing the final APP drawing, a draft drawing shall be submitted to the Contracting Agency for review. After Contracting Agency review comments have been addressed, the Contractor shall submit the final APP/AD drawing.

G. Parcel Plats. It is anticipated that parcels of land shall need to be acquired for the airport improvements. Parcel Plats are required for these parcels.

The Contractor shall coordinate with the Contracting Agency to determine the quantity and configuration of parcels to be acquired. Primary monumentation shall be established at each parcel corner. A parcel plat shall be developed for each parcel for which rights are to be acquired.

In addition to those items listed in "General Drawing Requirements," parcels plats shall be drawn at a scale suitable for legibility and clarity of detail. Each parcel plat shall show a minimum of two existing monuments.

A sample parcel plat, title block and border drawing file shall be supplied by the Contracting Agency. Drawings shall follow the Airport Parcel Checklist. Contact ROW Engineering at 269-0680 for a copy of this checklist. The Contractor shall make revisions to the Parcel Plats as requested by the DOT&PF.

Format: Draft - Paper. Final - 8-1/2" x 11" Paper and ACAD .DWG file(s).

14. **Acquisition Support.** The Contractor shall provide technical support for right-of-way negotiations. This shall include interpreting documents prepared for this project and explaining project impacts to the Contracting Agency's personnel, property owners, and others.

15. **Deliverables.**

The Contractor shall submit the following items:

A. The original field books.
B. An ASCII coordinate file containing all recovered and computed points. Coordinate files shall be in a comma delimited Pt#, Northing, Easting, Elevation, Descriptor format on a 3.5" disc with a hard copy printout. Descriptors shall be no longer than eight characters and shall not contain commas.
C. An ASCII file and hard copy printout listing all descriptors used and an expanded description of their meanings. Descriptors not used on this project shall not be included in this list. Descriptors are to be case sensitive, i.e., rebar.5 shall not equal REBAR.5
D. An ASCII file containing traverse summaries showing adjustments and coordinate positions with point descriptors.
E. A brief survey report describing all geodetic computations, and any significant problems or anomalies encountered in making specific boundary determinations; include the rationale used to resolve these problems.
F. The Preliminary APP drawing.
G. The Final APP drawing.
H. Parcel Plats.
I. A Parcel Summary for each parcel. These shall show boundary courses, and areas for the larger parcel, take including easement, net take, and remainder.

At 10% completion of each drawing, that drawing file shall be submitted for review. Each submittal shall include an up to date copy of the submittal checklist. Data shall be provided on 3.5-inch DS\HD 1.44 MB diskettes or CD-ROM and shall be delivered to the Contracting Agency's Project Manager.

16. **Special Requirement:** The Contractor shall exercise caution when working in the vicinity of the runways.

English AutoCAD Style Chart for Airport Property Plans, Parcel Plats, and R.O.S. w/metric equivalents

Leroy Style	Plotted Height – inches		Metric Style	Plotted Height - mm
l40	0.040			
l50	0.050		ML15	1.5
l60	0.060		ML15	1.5
l80	0.080		ML20	2.0
l100	0.100		ML25	2.5
l120	0.120		ML30	3.0
l140	0.140		ML35	3.5
			ML40	4.0
l175	0.175		ML45	4.5
l200	0.200		ML50	5.0
			ML55	5.5
l240	0.240		ML60	6.0
			ML65	6.5
			ML70	7.0
l290	0.290		ML75	7.5
			ML80	8.0
l350	0.350		ML90	9.0
			ML100	10.0
l425	0.425		ML110	11.0
			ML120	12.0
			ML130	13.0
l500	0.500		ML140	14.0
			ML160	16.0

L* = Leroy - Simplex.shx
LE* = Leroy Equal spaced - Steneq.shx (use in tables to align bearings & distances)
LS* = Leroy Slant - Simplex.shx w/15 degree oblique angle
H* = Helvetica - Helv.shx
D* = Dotfont - Dotfont.shx

Birchwood Airport Master Plan
Survey Submittal Checklist

Item	Description	Date Submitted		Date Returned to Contractor
		Hard Copy	Digital Copy	
E1	Weekly Research Documents		N/A	N/A
E1	Weekly Research Documents		N/A	N/A
E1	Weekly Research Documents		N/A	N/A
E1	Weekly Research Documents		N/A	N/A
E2	Draft Comma Delimited ASCII Coord file (submitted upon completion of note reduction)	N/A		N/A
E3	ASCII file listing all descriptors used and an expanded description	N/A		N/A
E3	An ASCII file containing traverse summaries showing adjustments and coordinate positions with point descriptors.	N/A		
E5	A brief survey report describing all geodetic computations, and any significant problems or anomalies encountered in making specific boundary determinations; include the rationale used to resolve these problems.		N/A	
E11	10%APP/AD AutoCAD Drawing File	N/A		N/A
E2	Final Comma Delimited ASCII Coord file			N/A
E7	The Draft APP/AD drawing			N/A
E8	Draft Parcel Plats			
E9	A Parcel Summary for each parcel		N/A	N/A
E11	10% ROS AutoCAD Drawing File	N/A		N/A
E10	Draft ROS drawing			
E10	Final ROS drawing			N/A
E6	The original field books indexed, reduced and checked.		N/A	N/A

Digital Data shall be provided on 3.5-inch DS\HD 1.44 MB diskettes or CD-ROM and shall be delivered to the Contracting Agency's Project Manager. **All submittals shall include an updated copy of this checklist.**

Task 5.5 Review of Preliminary Draft Airport Master Plan

The Contractor shall submit one copy of the preliminary draft master plan to Contracting Agency for review and comment. The Contractor shall revise the draft report as per review comments received. The Contractor shall then submit ten copies of the preliminary draft airport master plan to the Contracting Agency for review. The Contractor shall make requested revisions and resubmit to Contracting Agency for transmittal to FAA for public distribution approval.

The Contracting Agency shall coordinate a review of the preliminary draft airport master plan with the FAA. This review shall determine whether the Contracting Agency and FAA agree that the problems have been correctly identified and that appropriate alternative solutions have been proposed. The Contractor shall provide two versions of a cover letter and mailing labels to be distributed by Contracting Agency with the preliminary draft airport master plan. One version of the cover letter shall distribute the preliminary draft plan to appropriate federal and State agencies, the local government, the tribal organization, and the village corporation. The other version shall advise the remainder of the mailing list that copies of the preliminary draft plan are available for review upon request. Both cover letters shall introduce the study, provide a tentative study schedule, and solicit review, comment and suggestions for airport improvements. Reviewers shall be asked to provide preliminary ideas on needed improvements and development concepts for the airport. The Contractor shall record all comments received and prepare a draft airport master plan for evaluation during the environmental assessment. Ten copies and one camera-ready original of the draft airport master plan shall be delivered to Contracting Agency.

After the draft airport master plan has been reviewed by the FAA, the Contractor shall prepare an EA. Federal financial participation in, or approval of an airport master plan with the accompanying airport layout plan for a new airport location or runway, is subject to the preparation of an EA and subsequent decision as to whether to prepare an EIS or issue a Finding of No Significant Impact (FONSI). The Contractor shall be responsible for preparation of an EA in accordance with FAA Order 5050.4A Airport Environmental Handbook, dated 10/8/85 (and any applicable update) and the FAA Alaskan Region Environmental Document Guidelines produced by the Alaska State DOT&PF-FAA Environmental Working Group. The EA shall systematically examine the potential impacts of up to five alternative airport improvement programs to determine whether any potentially significant impacts occur. The EA shall provide environmental clearance for the more immediate range development shown on the draft airport layout plan in accord with AC 150/5050-4A Section 101(b)(4)(b). Environmental approval of the later stages of development shall be deferred until they become ripe for decision. Any alternatives considered but dismissed during preliminary planning stages of the proposed project shall be discussed briefly in the EA. The document shall be developed in coordination with appropriate local, state, and federal agencies, with community involvement as described in the handbook. The FAA shall be asked by the Contracting Agency to review and approve a Draft EA prior to public distribution. A public hearing may be held if deemed necessary. The FAA shall subsequently be asked by the Contracting Agency to review and approve the final EA.

COORDINATION

The Contractor shall prepare an EA, coordinate with federal, state, and local agencies. As a minimum, the EA shall be coordinated with:

Local government
Regional and Local Native Corporations and other land owners

Local Tribal Government
Coastal Resource Service Area
Division of Governmental Coordination
State Historic Preservation Officer (SHPO)
Alaska Department of Community and Regional Affairs (DCRA)
Alaska Department of Fish & Game (ADF&G)
Alaska Department of Natural Resources (DNR)
Alaska Department of Environmental Conservation (ADEC)
Bureau of Land Management (BLM)
U.S. Fish & Wildlife Service (USF&WS)
Environmental Protection Agency (EPA)
U.S. Army Corps of Engineers (COE)
National Park Service (NPS)
National Marine Fisheries Services (NMFS)
U.S. Department of Agriculture, Natural Resource Conservation Service
Any other agency with jurisdiction (or permit authority over activities associated with construction) over possible airport locations.

Depending on circumstances, other agencies may also be contacted for input into the content of the document. The purpose of this coordination is to identify agency concerns, provide information on the proposed project, obtain information that shall aid in the assessment of project impacts, identify permitting requirements, and to identify any critical environmental issues and concerns that might require special study. In coordinating with the agencies, the Contractor shall not negotiate or in any way commit the Contracting Agency to any specific mitigation plan or course of action.

FORMAT

The environmental document, and all reports prepared in conjunction with development of this document, shall be written in plain language (per 40 CFR Part 1502.8) and shall include appropriate graphics (maps, illustrations, and/or photographs) to ensure that the public can easily comprehend the scope of the proposed project and the potential environmental impacts associated with the proposed alternatives. All reports shall be typed with one and one-half line spacing. All texts must be clearly reproducible in black and white. Graphics shall be in 8-1/2 x 11 inch or 11 x 17-inch format. A4 (210mm X 297mm) paper shall not be used. Lettering shall be black inking or typeset. All graphic aids such as tapes, screens, or symbols shall be applied cleanly to a clear sheet over the photographs for the offset printing process. Tapes, screens or symbols may be directly applied to photographs which are to be color copied. Lettering aids such as Kroy and tape shall not be used on graphics which are to be reproduced on photocopy machines or other heat producing equipment.

Task 6.1 Draft Environmental Assessment

The EA shall be issues based, only discussing those resources or impact categories that may be significantly impacted by the proposed project, or those that were identified

as potentially controversial during the environmental scoping process. Those resource or impact categories determined not to be present in the affected environment, were not identified as issues during scoping, and/or were known not to be significantly impacted by the proposed action do not need to be evaluated in the EA. They shall be discussed in the Non-Issue Documentation Memo that shall be appended to the EA. The EA shall contain, as appropriate, the following Sections:

I. Cover
II. Table of Contents
    List of Figures
    List of Tables
III. Document Summary
IV. Purpose of and Need for Action
V. Alternatives Considered
    A. No-Build Alternative
    B. Build Alternatives
VI. Affected Environment
VII. Environmental Consequences
    1. Noise
    2. Compatible Land Use
    3. Social Impacts
    4. Induced Socioeconomic Impacts
    5. Air Quality
    6. Water Quality
    7. Department of Transportation Act, Section 4(f)
    8. Historic, Architectural, Archaeological, and Cultural Resources
    9. Biotic Communities
    10. Endangered and Threatened Species of Flora and Fauna
    11. Wetlands
    12. Flood plains
    13. Coastal Zone Management Program
    14. Coastal Barriers
    15. Wild and Scenic Rivers
    16. Farmland
    17. Energy Supply and Natural Resources
    18. Light Emissions
    19. Solid Waste Impacts
    20. Construction Impacts
    21. Hazardous Materials
    22. Material Site Impacts
    23. Permits Required
VIII. Other Considerations
IX. Coordination
X. List of Preparers
XI. Bibliography
XII. Appendices

Environmental Consequences. This section of the EA shall discuss all probable beneficial and adverse social, economic, and environmental impacts of the alternatives under consideration and describe measures to mitigate potentially adverse impacts. The level of detail required for each element of the environment analyzed shall be commensurate with the significance of the issue to be studied. The factors to be discussed under the different impact categories are in the FAA Airport Environmental Handbook, Order 5050.4A and Alaskan Region Environmental Region Guidelines.

Appendices. The appendices shall document the analysis, data collection, and correspondence prepared during the project. Appendices shall include, but shall not be limited to, the following:

A. **Wetlands Analysis.** The Contractor shall evaluate the impacts of the proposed project on wetlands within the project limits. The wetlands impact analysis shall address the importance of the impacted wetlands and the severity of the impacts, including the number of acres/hectares of wetlands involved and the volume of fill to be placed and/or quantity of excavation to take place in wetlands. In evaluating the importance of the wetlands, the analysis shall consider the primary functions of the wetlands, the relative importance of these functions to the total wetlands resource in the vicinity, and any other pertinent factors, such as uniqueness, that may contribute to the importance of the wetlands. A map, identifying impacts by alternative to the wetlands types in the project vicinity, shall be included in the analysis. With approval of the Contracting Agency, mapping developed during the office study may suffice for the wetlands analysis. However, if a field wetlands delineation (optional - to be determined) is deemed necessary by the Contracting Agency to determine whether wetlands exist within the affected environment, it shall be done in accordance with the Corps of Engineers 1987 Wetlands Delineation Manual and accomplished by a Contractor who has been formally trained in this method.

B. **Phase I Preliminary Site Assessment.** A Phase I Preliminary Site Investigation of the project area has been prepared and will be provided to the Contractor.

   The Contractor shall summarize the results of the Phase I Preliminary Site Assessment in the EA. The summary shall include graphics to clarify or supplement the text. All known or potentially contaminated sites identified during the investigation shall be clearly described including the type and extent of contamination, if known.

C. **Conceptual Stage Relocation Study.** The Right-of-Way section of the Contracting Agency shall provide the Contractor a conceptual stage relocation study if it is determined that residents must be relocated for the selected airport development. This provides information to the Contractor concerning the demographics and relocation possibilities for the proposed alternatives. This is to be included in the EA, in the appendix.

D. Historical, Archaeological, and Cultural Resources Investigation. The Contractor shall coordinate with the State Historic Preservation Officer (SHPO) to determine the need for a cultural resources survey. A survey report may be required detailing the possible historic and archaeological properties and determinations of eligibility for nomination to the National Register of Historic Properties.

Identification of Historic Properties. "Identification" includes identifying properties and determining whether or not they are listed on, or eligible for inclusion in, the National Register of Historic Places. The standard for identification is a reasonable and good faith effort, including (as necessary) background research, consultation, oral history interviews, reconnaissance investigations, and intensive field surveys.

All pertinent archeological and historical literature, and the records of the Alaska Heritage Resources Survey (AHRS) will be reviewed to compile information about the project's defined Area of Potential Effect. This effort will focus on determining if there are any known buildings, structures, and objects in the Area of Potential Effect that are listed in or otherwise eligible for the National Register.

Information should also be sought from consulting parties and others likely to have knowledge of, or concerns with, historic properties in the area. Specific attention is to be given to properties and effects of concern to Native tribes and organizations. Federally recognized tribes are to be consulted on a government-to-government basis, recognizing their sovereign status. Attention is to be paid to concerns about properties of religious and cultural significance, regardless of who may own such properties.

Cultural Resource Surveys. Upon completion of the identification of historic properties, the Contractor shall coordinate with the SHPO to determine the need for a cultural resources survey.

Reconnaissance Surveys. A reconnaissance level survey may be required early in the planning stages of the project to determine if an intensive survey is warranted. As defined by the Secretary of the Interior's Standards and Guidelines, a reconnaissance survey is an extensive rather than intensive "walk-over" conducted with little or no subsurface testing. A reconnaissance survey is only a sampling which may locate some (but not all) of the properties which could be affected by a project and allow an evaluation of their significance. Therefore, a reconnaissance survey alone cannot normally be used to satisfy all the requirements of Section 106 of the National Historic Preservation Act, since historic properties in a project area may go undiscovered. It must be recognized that "(i)n most cases, areas surveyed in this way will require resurvey if more complete information is needed about specific properties" (Federal Register 48(190):44722).

Intensive Field Surveys. The goal of an intensive field survey is to locate all previously unknown, but potentially eligible properties in the Area of Potential Effect (APE). APE shall be determined in consultation with the Contracting Agency.

Intensive surveys should include systematic pedestrian examinations of the ground surface and subsurface testing. Surface collecting and mapping can be used to the establish site boundaries. An intensive survey must include subsurface testing as a major component for field sampling. However, the frequency and nature of the tests shall be determined in consultation with the Contracting Agency.

Determination of Eligibility. The Contractor shall make recommendations to the Contracting Agency regarding the eligibility of properties. The Contracting Agency will then correspond with the SHPO to make any determinations regarding the properties.

Documentation Requirements. Results of the work shall be assembled in a survey report with graphics as supporting documentation. Reports shall be submitted in two volumes. One volume shall be suitable for release to the public as an appendix to the environmental document and the other shall contain sensitive information such as site specific maps, figures, and text.

No formal nominations for the National Register will be required. A Determination of Eligibility (DOE) for the National Register is based on a description and evaluation of the property; a statement of significance; a selected list of sources; and maps, photographs, and other illustrations. This information does not have to be submitted on a National Register nomination form, although it is much the same as that needed for National Register listing. Consideration should be given to both the criteria of significance and integrity of the site. This evaluation should consider the historic context of the property, including its relation to other known historic properties. The question of "how much information is enough" to evaluate a property must be considered in relation to historic contexts. In some cases, research may be necessary to establish contexts. Many properties may not warrant an individual eligibility determination, but may prove to be a contributing element of a larger historic district that does meet the criteria.

Human Remains. In the event that human remains are discovered, excavations will continue only to the extent necessary to verify that the remains are human. After verification, excavations in the vicinity shall cease and the Contracting Agency shall be notified. The Contracting Agency will notify other parties; SHPO, agencies, Native groups, etc. Further verbal instruction will then be issued (i.e., to refill excavation, or to continue).

Administrative Requirements. All work shall be done in accordance with 36 CFR Part 800 (http://www.achp.gov/regs.html), the FAA Airport Environmental Handbook — Order 5050.4A (1985) <http://www.faa.gov/arp/app600/5054a/ 5054a1.htm>, the Secretary of the Interior's Standards and Guidelines (1983:44722), and the Advisory Council on Historic Preservation's general guidelines for identification and testing procedures as set forth in *Treatment of Archaeological Properties, A Handbook.*

Field notes, samples, artifacts and other collected data shall be curated with the University of Alaska Museum in Fairbanks unless otherwise specified by the

Contracting Agency. All photos, research notes, and other materials related to this project are the property of the Contracting Agency and shall not be used for scholarly reports, lectures, or talks without the written permission of the Contracting Agency.

A post survey meeting or conference telephone call shall take place within one week after the Contractor's return from the project site to inform the Contracting Agency of field results.

An electronic copy of the draft report and one color print of each photo included in the report shall be submitted to the Contracting Agency. The report shall be in Microsoft Word format (most recent version) saved to a 3.5" floppy disk or CD. The Contracting Agency will be responsible for distribution of the report.

The release of any information to the press/media concerning this task shall be the responsibility of the Contracting Agency. The Contractor shall not release information without prior approval of the Contracting Agency.

The Contractor is responsible for any archaeological survey permits or permissions necessary to accomplish this work.

The Contractor shall not release any information to the press/media related to work being done as a part of this contract. This restriction shall be in place throughout the period of performance specified in this agreement.

All photos, research notes, and other materials related to this project are the property of Contracting Agency and shall not be used for scholarly reports, lectures, or talks without the written permission of Contracting Agency.

The Contractor shall make recommendations to the Contracting Agency regarding eligibility of sites or properties to the historic register or those containing archaeological significance. The Contracting Agency shall then correspond with the State Historic Preservation Office to make any determinations regarding the sites or properties.

E. Draft Application for Section 404 Permit, Coastal Project Questionnaire. The Contractor shall prepare a draft application for the U.S. Corps of Engineer Section 404 Permit, a draft Coastal Project Questionnaire (CPQ), and any other agreed to permit applications, and append them to the Draft EA. (Note- Once the EA is approved for distribution, the Contractor shall be required to submit the final permit application and CPQ to the Corps of Engineers and Division of Governmental Coordination, as appropriate.)

F. Geotechnical Report. Based on the adequacy of the soils information collected during the office study, the Contracting Agency may authorize the Contractor to conduct field samples of areas of the airport to supplement existing information. The field drilling program would be conducted according to a drilling plan to be

approved by the Contracting Agency. Information collected would be summarized and mapped in a format that supplements the office study effort and shall follow the format set out in the Contracting Agency's Engineering Geology and Geotechnical Exploration Procedures Manual.

G. **Non-issue Documentation Memo.** The Non-issue Documentation Memo shall discuss those resources and impact categories that are not known to be present within the affected environment, were not identified as an issue during scoping, and/or were known not be significantly impacted by the proposed action. A brief discussion documenting why each of these resource categories are not expected to be significantly impacted shall be provided. The memo shall be addressed from the Contractor's Project Manager to the Contracting Agency Project Manager and copied to the FAA. A draft of the memo shall be provided to the Contracting Agency for approval prior to finalization and distribution.

H. **Noise.** Based on aviation forecasts of operations and aircraft type, noise exposure maps shall be developed using the latest version of the FAA Integrated Noise Model. Noise contours shall be developed for the existing condition, the future no action alternative and the preferred development alternative. The noise exposure maps shall be developed in accord with FAR part 150 and AC 150/5020-1, "Noise Control and Compatibility Planning for Airports." On-site noise monitoring and calibration of the noise model are proposed as optional additional services.

I. **Agency and Public Correspondence.** This appendix will include copies of e-mail, telephone logs, newsletters, attendance lists, meeting minutes, and regular mail received or sent out for the project. Agency correspondence shall be organized by agency.

Task 6.2 Review of the Draft Environmental Assessment

Once the Draft EA is completed, the Contractor shall compile and submit the Draft Environmental Assessment to the Contracting Agency for review. Once the review is complete, the Contractor shall make all necessary revisions. Successive reviews may be required to ensure the document is in the proper format and content is appropriate.

FAA Approval. Upon acceptance of the Draft Environmental Assessment by the Contracting Agency, the Contracting Agency shall submit the document to FAA for review and approval. Should the document require further revisions, the Contractor shall revise the document as directed, and resubmit the document to the Contracting Agency.

Review and Revision Schedule. All reviews and revisions shall be completed according to the Work Schedule. This schedule shall allow approximately 45 days for each FAA review. The Contracting Agency reviews shall require 5 working days for routine reviews and 10 working days for draft documents.

Public Distribution Approval. Following FAA approval of the Draft Environmental Assessment, the Contractor shall finalize the document and submit the original

unbound document and original graphics to the Contracting Agency and submit final permit applications to the appropriate agencies. The Contracting Agency shall reproduce and distribute the document.

Task 6.3 Public Hearing

A minimum of 30 days after distribution of the Draft Environmental Assessment the Contractor shall conduct a public hearing in the community. The Contractor shall be responsible for the following: organizing the hearing; notifying the local councils and native corporations, agencies, and the public of the hearing date, place, and time; advertising the hearing in the local media; providing notices of the hearing to be posted in the community; arranging for an interpreter of the local native language if necessary; reserving facilities; preparing the agenda; making oral presentations; providing presentation graphics; compiling a list of attendees; responding to questions and requests for additional information; providing comment sheets for written comments; and preparing a written summary of the hearing. In the event that a request to make formal testimony is received, as an additional service, the Contractor shall provide a recording device, record the testimony, and provide a verbatim written transcript of same as part of the hearing summary. The Contracting Agency shall approve all notices before publication and approve the time, date, and location of the hearing. All notices shall conform to FAA Order 5050.4A (and any updates) and Contracting Agency policy for content and advertisement requirements. The Public Meeting shall be conducted in the open-house format unless otherwise directed. A comment period of at least 15 calendar days shall be provided after the Public Hearing.

Task 6.4 Final Environmental Assessment

After the formal comment period, the Contractor shall meet with the Contracting Agency to discuss the selection of a preferred alternative and how to respond to comments received on the Draft Environmental Assessment. Following this meeting, the Contractor shall resolve any outstanding issues as directed by the Contracting Agency, revise the EA to address Agency and public comments and issues brought forth at the Public Hearing and/or as a result of the review process. The Contractor shall prepare and mail written responses to all public and agency representatives that made formal comment. All written responses shall be approved in draft form by the Contracting Agency. Signature authority for the letters shall be determined by the Contracting Agency. Responses shall be included in the final EA.

Document Revision and Review. The Contractor shall revise the Draft Environmental Assessment to address Agency and public comments. The Contractor shall submit the revised report to the Contracting Agency for review. Once the review is complete, the Contractor shall make any necessary revisions. Successive reviews may be necessary to adequately address all issues.

FAA Approval. Upon acceptance of the revised report by the Contracting Agency, the Contracting Agency shall submit the document to FAA for review and approval. The Contractor shall revise the report as required for FAA approval, and submit the Final

Environmental Assessment to the Contracting Agency. The Final Environmental Assessment shall include the final ALP produced under Task 4.1.

Review and Revision Schedule. All reviews and revisions shall be completed according to the approved work schedule. This schedule shall allow approximately 45 working days for each FAA review, and 5 working days for Contracting Agency review.

Final Environmental Assessment. Following FAA approval of the revised Environmental Assessment, the Contractor shall submit the original unbound final document and original graphics to the Contracting Agency. This task shall be complete (1) when the approved unbound documents are received by the Contracting Agency, (2) when a Finding of No Significant Impact is signed by the FAA or when the FAA determines that an EIS is required, and (3) all Contractor acquired permits per Task 2.5 are received by the Contracting Agency.

Product: One camera ready copy of the Final Environmental Assessment with the FAA decision as to whether to prepare an Environmental Impact Statement (EIS) or be issued a Finding of No Significant Impact (FONSI).

Task 6.5 Permits and NEPA Process

The Contractor shall acquire all federal, state, and local permits, licenses, and clearances for improvements to be constructed in the near-term (five years or less from now) as determined by the Contracting Agency. The Contractor shall merge the NEPA and Section 404 processes as appropriate. There is no formal agreement between FAA, the COE, and the Contracting Agency on the NEPA/404 merger. Consequently, the Contractor shall have to coordinate permit application requirements with the NEPA document preparation as appropriate. The EA should include the information required by the Section 404 (b)(1) guidelines as much as possible. The EA should include copies of the draft Section 404 permit application, Coastal Project Questionnaire, and any other agreed to permit applications. Section 404 permit applications may have to be applied for separately from the environmental document. However, the comment period for distribution of the document and the Section 404 Public Notice should be coordinated so that they are concurrent to the degree possible.

PHASE 3 - FINAL MASTER PLAN

At the conclusion of the EA, the Contracting Agency may negotiate for services under Phase 3 of the contract.

Task 7.1 Revised Cost Estimate

The Contractor shall prepare detailed construction cost estimates for the approved airport alternative development to be included in the final master plan. These estimates shall have evolved from the final analysis of technical and environmental considerations. Estimated construction costs shall be adjusted to include allowance for engineer fees for the preparation of detailed plans and specifications, and overhead for construction administration. Estimated costs of land acquisition, as well as the costs of

easements required to protect approach and departure areas, shall be included. The Contractor shall provide all cost calculations and explain all estimate assumptions.

Task 7.2 Final Master Plan Document

Following the revision of the draft Master Plan and EA approval by FAA, a final Master Plan document shall be prepared. This report shall contain all chapters of the phased reports, corrected with the comments received through the review process. The Contractor shall submit one copy to the Contracting Agency for their review and approval. The Contracting Agency shall then submit the final Airport Master Plan to the FAA for their approval.

GENERAL ADMINISTRATIVE REQUIREMENTS

Contract. The Contractor shall provide services as identified and authorized by sequentially numbered Notices-to-Proceed that shall be issued for each separate phase of work. The Contractor shall not perform work or incur billable expense except as authorized by a NTP.

The Contracting Agency makes no guarantee that all phases of work shall be accomplished and reserves the option to terminate the study at the end of any phase of work. If an Environmental Impact Statement (EIS) is required for the selected airport alternative development, the Contracting Agency shall enter into negotiations with the Contractor or terminate this master plan study for new proposals at its discretion.

Additional Services. As needed in order to complete the master plan or environmental assessment, the Contracting Agency may negotiate with the contractor for additional services not herein identified.

Duplicate Requirements. In combining the Airport Master Plan process with the Environmental Assessment process, and the Airport Layout Plan process, duplicate requirements may be encountered in this Statement of Services in regards to reports and activities. No duplication is intended. The Contractor shall coordinate all work items with the Contracting Agency to maximize the work efforts and eliminate any perceived duplication.

The Contractor shall conduct the technical presentations of all public involvement. The Contractor shall attend public meetings as necessary to provide status reports on the project.

Coordination. The Contracting Agency shall coordinate any required services from functional groups within the Contracting Agency. These groups may include Materials/Geotechnical; Safety & Utilities; Preliminary Design & Environmental; Right-of-Way; and Contracts. It is important to ensure that all required environmental permits, right-of-way and utility agreements are obtained in a timely manner, and the corresponding information is reflected in the plans and specifications. The Contractor shall be

responsible for providing timely information required by the functional groups as identified within task descriptions.

In conjunction with preparation of the EA, the Contractor shall coordinate with appropriate Federal, State, and Municipal agencies. The purpose of this coordination shall be to inform the agencies of the proposed action and to allow them to help identify environmental concerns. This coordination shall not include negotiating mitigation of potential impacts, however it may include discussion of mitigation alternatives. The Contractor shall not commit the Contracting Agency to any action to be accomplished by the proposed project. The results of all coordination efforts shall be summarized in the EA.

Meetings. The Contractor shall notify the Contracting Agency of all meetings with agencies, organizations, or individuals at least three working days in advance. Prior to such meetings, the Contractor shall discuss the agenda for the meeting with the Contracting Agency to ensure that no inappropriate or incorrect information is disclosed. Data collected under this agreement shall not be released to any agency or to the public without prior approval of the Contracting Agency. The Contractor shall document all meetings and telephone conversations concerning the proposed project. Original signed documents shall be forwarded to the Contracting Agency.

FAA Communication. Communications with FAA regarding this project shall be handled solely by the Contracting Agency. The Contractor shall be available in person for FAA meetings with Contracting Agency.

Correspondence. All correspondence prepared by the Contractor shall bear the Contracting Agency's assigned Project title and numbers (State & Federal). The Contractor shall submit all written material (survey forms, scoping letters, etc.) used to solicit information or collect data for this analysis to the Contracting Agency for review and acceptance prior to its use or distribution. Copies of all outgoing correspondence and originals of all incoming correspondence shall be provided to the Contracting Agency.

Documents. The Contractor shall modify work products in response to direction from the Contracting Agency. Corrections, adjustments, or modifications necessitated by the review/approval process, but which do not affect the scope, complexity, or character of the work, shall be considered a normal part of the Contractor's services.

Except as noted in task descriptions, documents shall be essentially complete when submitted to the Contracting Agency. Documents having significant errors or omissions shall not be reviewed until such problems are corrected.

Following each review, the Contracting Agency shall provide comments and may hold a meeting to discuss the issues. The Contractor's personnel that are in-responsible-charge for the documents under review shall attend the meeting. They may be asked to interpret and provide explanations for the content of such documents. All changes from previous submittals shall be clearly explained.

The Contracting Agency shall be responsible for the distribution of all draft and/or final reports produced under this agreement.

The cover of all Documents and Reports shall include the following information:

a. Name of Document or Report.
b. Date.
c. Indicate whether draft or final.
d. Project Name.
e. State and Federal Project Number(s).
f. Prepared for: Alaska Department of Transportation and Public Facilities.
g. Prepared by: _____
h. Map and/or picture of project area.

Where a contract deliverable item is to be reviewed and the contract requires only one copy or original to be delivered, the Contracting Agency shall reproduce and distribute all the copies for review. Items delivered for reproduction shall be organized ready for copying and not stapled or bound.

When the Contract calls for multiple copies of documents or reports as a deliverable item, the copies shall be printed on both sides of the paper. However, the cover and pages with illustrations, multicolored graphics, or photographs shall be printed on one side of the page only. All copies shall be bound.

Within a month after the Contracting Agency accepts the completed project, the Contractor shall submit to the Contracting Agency the original of all documents prepared for this project. These development documents include all notes, sketches, maps, photographs, survey data, computations, cross sections, and other materials that were created to develop, record, or justify work done on the project. These documents shall identify all the assumptions made.

Original documents shall be submitted in loose-leaf three ring binders. The binders shall be labeled on the spine with the project name, "Completion Documents", and the binder number. The front of the binders shall also be labeled with this information as well as the State and Federal project numbers and a brief description of what documents are contained in the binder. The binders shall have dividers that sort the documents by logical category. The binders shall be numbered and the first binder shall include a table of contents.

An electronic copy of all draft and final versions of the Masterplan and Environmental document, as well as any associated reports (e.g. Noise, History/Archeological), shall be submitted to ADOT&PF. The electronic copy of these documents should include spreadsheets, photos, or other graphics, scanned meeting sign-in sheets, and public and agency comments sheets. The documents shall be in Microsoft Word (most recent version) format saved to a CD or zip disk. The purpose of the requested electronic copy is to enable ADOT&PF to reproduce these documents in their entirety or send the document through electronic channels such as e-mail or the Internet.

Permits. The Contractor shall obtain any **Right of Entry Permits** required to perform the work under this project. Obtaining these permits may involve private property owners and/or the Bureau of Indian Affairs (BIA) or their designated representatives in the case of native allotments.

Billing Reports.. The Contractor shall provide a Project Billing Summary Report with each billing in a format approved by the Contracting Agency. The report shall specifically describe the work and other items for which the billing is submitted, and shall estimate the percent complete of each task. Any delayed costs from previous billing periods that are included in the current billing must be clearly explained in the report.

ATTACHMENT A

BIRCHWOOD

AGENCY SCOPING

QUESTIONS

AGENCY SCOPING LETTER QUESTIONS

Aircarriers

In addition to identifying any concerns and/or issues your company might have, please provide any information and/or data with respect to airport use, access problems, land use concerns, bird strike problems or conflicts with other animals, subsistence use on or accessed through airport property, accidents, and/or any other special conditions that may be affected by the proposed project.

Alaska Department of Environmental Conservation

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. We have researched the ADEC Contaminated Sites, Spills and LUST program databases and any findings are identified in this scoping letter and/or the Appendix. If you know of any other confirmed or suspected contaminated sites, spills and any registered underground or above ground fuel storage tanks that may affect or be affected by the proposed project please provide that information.

2. Identify any water quality concerns.

3. Provide information and/or data on existing (permitted or unpermitted) solid waste landfills, dumps, discharges, or sewage lagoons in the project area.

4. Provide information and/or data on existing drinking water supplies in the project area.

5. Identify any permits and/or clearances to be obtained from your agency for the proposed project.

Alaska Department of Fish and Game, Habitat & Restoration Division

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. We have researched the ADF&G's *An Atlas to the Catalog of Waters Important to the Spawning, Rearing or Migration of Anadromous Fishes* and any findings are identified in this scoping letter and/or the Appendix. If you have any other information and/or data on anadromous or resident fish streams in the vicinity of the proposed project, including spawning/rearing habitat and migration corridors please provide us that information.

2. Identify any fish species within the project boundaries that may be used for subsistence.

3. We have researched the ADF&G *State of Alaska Refuges, Critical habitat Areas and Sanctuaries* and any findings are identified in this scoping letter and/or the Appendix. If these special areas exist in the project vicinity, would the normal activities of these areas be affected by the proposed project?

4. Provide information on wildlife other than fish in the vicinity of the proposed project.

5. Would the project affect wildlife migration corridors or bisect/segment wildlife habitat?

6. Identify any permits and/or clearances to be obtained from your agency for the proposed project.

ADNR, Division of Mining, Land and Water, Resource Assessment & Development Unit

In addition to identifying any concerns and/or issues you might have with the proposed project, the following information is requested:

1. Land Use Plans - We have researched the ADNR Land Use Plan for the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other existing and/or proposed land use plans and can identify any land use objectives that may conflict with the proposed project please provide that information.

ADNR, Division of Mining, Land and Water, Southcentral Region Office

1. Permits - Identify any permits or clearances to be obtained from your agency for the proposed project.

ADNR, Division of Parks & Outdoor Recreation

In addition to identifying any concerns and/or issues you might have with the proposed project, the following information is requested:

1. State Parks - We have researched the ADNR DPOR *Catalog of the Alaska State Park System* for the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other existing or proposed State Parks in the vicinity of the project, and can identify any Park objectives or activities that may conflict with the proposed project please provide that information.

ADNR, Division of Parks & Outdoor Recreation, SHPO

1. We have researched the Alaska Heritage Resources Survey (AHRS) for the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other confirmed or potential archaeological, historical, and/or cultural sites in the vicinity of the proposed project please provide that information.

City, Village, or Borough

In addition to identifying any concerns and/or issues the city might have with the proposed project, the following information is requested:

1. Identify any existing and/or proposed zoning requirements and/or land use controls in the project area. If permits are required please identify which ones.

2. Identify any other local improvement project(s) under construction or proposed in the vicinity of the project within the foreseeable future.

3. Does the community support the proposed project?

Local Coastal District Coordinator (Coastal Zone Management)

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. Identify any potential conflicts the proposed project may have with the goals or objectives of the local coastal management program.

2. At the present time, does your district have any objections to the proposed project?

Public/Adjacent Land Owners (Airports Only!!)

In addition to identifying any concerns and/or issues you might have with the proposed project, please provide any information and/or data with respect to airport use, access problems, land use concerns, subsistence use on or accessed through airport property, and/or any other special conditions that may be affected by the proposed project.

Tribal Councils, IRAs and Traditional Councils

We have researched the Alaska Heritage Resources Survey (AHRS) for the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other confirmed or potential archaeological, historical, cultural and/or religious sites that may be affected by the proposed project please provide that information.

U.S. Army Corps of Engineers

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. We have researched the Federal Emergency Management Agency Flood Maps for the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other information and/or data with respect to the base floodplains, regulatory floodways, and/or special flood hazard areas of drainages that may be affected by the proposed project please provide that information.

2. Are there any navigable waters of the U.S. in the project vicinity over which the COE has Section 10 authority?

3. Identify any permits and/or clearances to be obtained from your agency for the proposed project.

U.S. Dept. of Commerce
(National Marine Fisheries Services)

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. We have researched the NMFS website with respect to known threatened and/or endangered species and their habitat for the project area and any findings are identified in this scoping letter and/or the Appendix. If you have any other information and/or data on threatened and/or endangered species in the project area that might potentially be affected by the proposal please provide that information.

2. We have researched the NMFS website to determine if essential fish habitat (EFH) pursuant to the Magnuson Act will be impacted by the proposed project and any findings are identified in this scoping letter and/or the Appendix. If you have any other information and/or data on EFH species or habitat please provide that information.

U.S. Environmental Protection Agency

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. Identify any sole source or principal drinking water sources that may be affected by the proposed project.

2. We have researched the Alaska Department of Environmental Conservation Contaminated Sites, Spills and LUST program databases and any findings are identified in this scoping letter and/or the Appendix. If you know of any other confirmed or suspected contaminated sites, spills and any registered underground or above ground fuel storage tanks that may affect or be affected by the proposed project please provide that information.

3. Identify any permits and/or clearances to be obtained from your agency for the proposed project.

U.S. Fish and Wildlife Service

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the following information is requested:

1. We have researched the USF&WS website with respect to known threatened and/or endangered species and their habitat for the project area and any findings are identified in this scoping letter and/or the Appendix. If you have any other information and/or data on threatened and/or endangered species in the project area that might potentially be affected by the proposal please provide that information.

2. We have researched the USF&WS website with respect to identifying National Wildlife Refuge lands in or adjacent to the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other existing or proposed refuge lands in the vicinity of the project, and can identify any refuge objectives or activities that may conflict with the proposed project please provide that information.

3. We have researched the USF&WS National Wetland Inventory Maps with respect to identifying wetlands in or adjacent to the project area and any findings are identified in this scoping letter and/or the Appendix. If you know of any other wetlands that may be impacted by the project please provide that information.

4. Provide information or data on important fish and wildlife habitats or migration corridors potentially affected by the proposal.

5. Provide information on known active or inactive eagle nests in the project area.

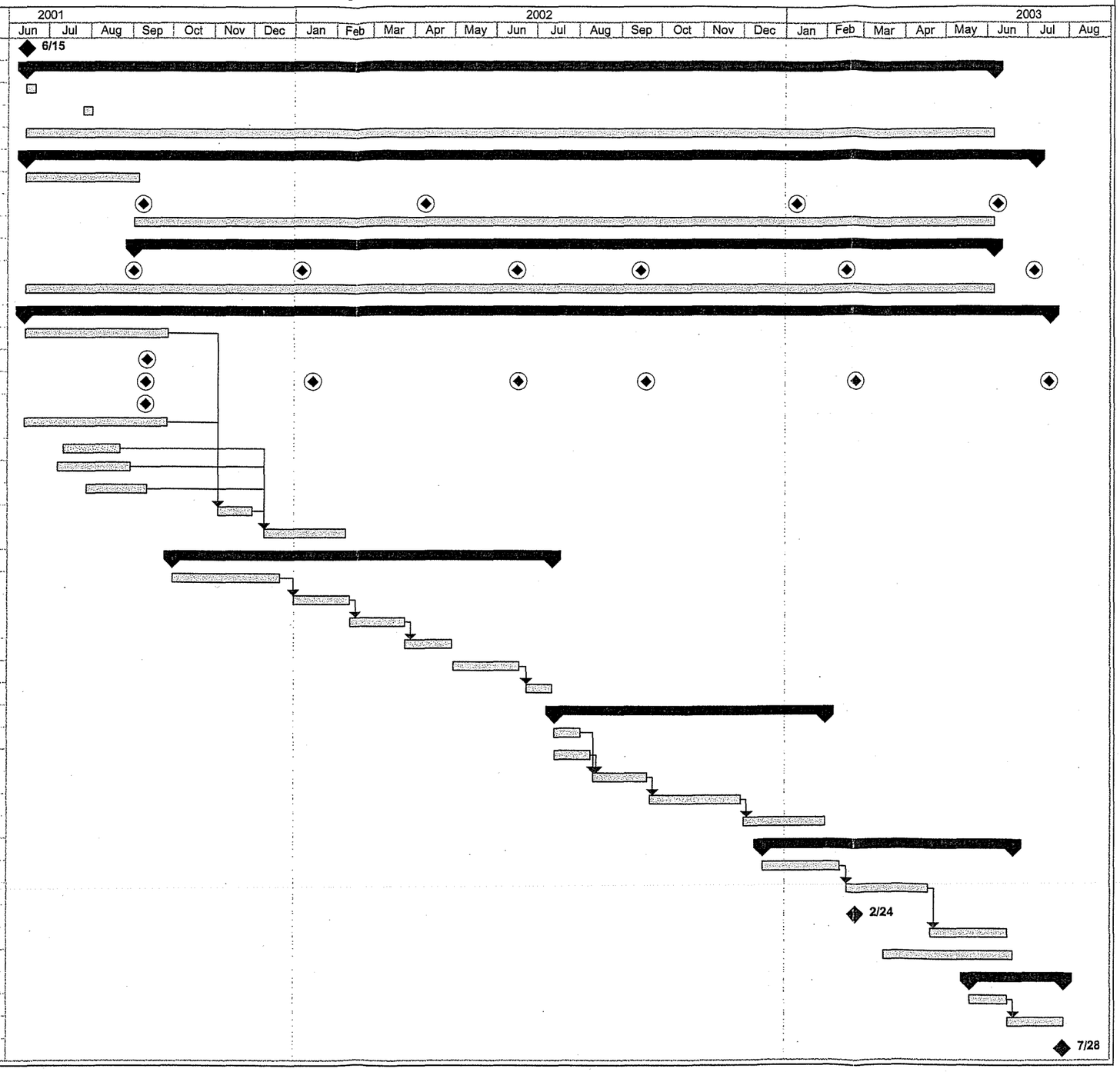
6. Identify any permits and or clearances to be obtained from your agency for the project.

APPENDIX D

SCHEDULE

Birchwood Airport Master Plan
Project Schedule

Task Name
Phase 1 Airport Master Plan
Task 1.0 Project Administration
Task 1.1 Project Work Schedule
Task 1.2 Public Involvement Plan
Task 1.3 Contract Administration
Task 2.0 Ongoing Public Information
Task 2.1 Mailing List
Task 2.2 Newsletters
Task 2.3 Project Website
Task 2.4 Airport Advisory Committee
Task 2.5 Coordination
Task 3.0 Conditions and Needs Assessment
Task 3.1 Issues Identification (a.-c.)
a. Kickoff Meeting
b. Public Meeting
c. Agency Field Trip
Task 3.2 Office Study
d. Forecast Aviation Activity
Task 3.3 Base Maps
Task 3.4 Field Reconnaissance
Task 3.5 Office Study Technical Memo 1
DOT&PF Review
Task 4.0 Alternatives Development and Analysis
Task 4.1 Demand-Capacity
Task 4.2 Identify Potential Airport Development Alternatives
Task 4.3 Preliminary Alternatives Evaluation
Task 4.4 Office Study Technical Memo 2
Task 4.5 Scoping
Task 4.6 Preferred Alternative Identification
Task 5.0 Master Plan Development
Task 5.1 Controlled Aerial Photography
Task 5.2 Contour Mapping
Task 5.3 Draft Airport Master Plan
Task 5.4 Airport Layout Plans
Task 5.5 Review of Draft Airport Master Plan
Task 6.0 Environmental Assessment (EA)
Task 6.1 Draft Environmental Assessment
Task 6.2 Review of Draft EA
Task 6.3 Public Hearing
Task 6.4 Final Environmental Assessment
Task 6.5 Permits and NEPA Process
Task 7.0 Final Airport Master Plan
Task 7.1 Revised Cost Estimate
Task 7.2 Final Master Plan Document



APPENDIX E

QUALITY CONTROL

1.0 PURPOSE

As part of HDR Engineering, Inc.'s (HDR's) direction for the future, the Quality Assurance/Quality Control (QA/QC) Program has been developed as a means of addressing several key elements of HDR's mission:

- Maintain a reputation for quality performance
- Achieve financial success
- Continue to grow

The QA/QC Program is designed to achieve HDR's mission in a well-defined and systematic fashion while satisfying the individual requirements of HDR's clients and the needs of HDR's employees for creativity. The QA/QC Program promotes prevention rather than detection, and being proactive rather than reactive. It focuses on documenting and improving the process itself.

2.0 DEFINITIONS

See Standard Definitions (QAP-003).

3.0 PROCEDURES

This QA/QC Program Definition is a summary of HDR's QA/QC Program. The following paragraphs describe the responsibilities and implementation procedures.

3.1 Responsibilities

All HDR employees are individually responsible for being aware of and implementing the QA/QC Program.

The Chief Operating Officer (COO) has the ultimate responsibility for developing and implementing the QA/QC Program.

National Directors for Business Groups and the Marketing Director are responsible for monitoring the implementation of the QA/QC Program through project reviews and for providing resources to develop Technical Procedures for the program.

Department Managers are to implement the QA/QC Program; provide all staff with an understanding of the QA/QC Program; establish a process to facilitate staff feedback on the program; establish a system to verify adherence to the QA/QC Program policies and procedures; and monitor the program implementation through project reviews.

Project Managers are to incorporate applicable portions of the QA/QC Program into each project.

3.2 Implementation

The QA/QC Program is being implemented in phases by the QA/QC Steering Committee, which is responsible for all QA/QC Program policies and procedures. Employees are encouraged to provide QA/QC Steering Committee members with recommendations for modifying procedures or developing new ones. Proposed procedures shall be prioritized for development and scheduled. The QA/QC Steering Committee shall periodically review priorities and schedules. When it is determined that Technical Procedures are required to define specific activities, the National Directors for Business Groups and the Marketing Director shall assign individuals and resources for their development, which shall be coordinated through the QA/QC Steering Committee.

The QA/QC Steering Committee has the following members:

- George Little
- Mary Wees
- Bill Raleigh
- Robert Williams
- Dave Backer
- Mike Harris
- Dave Schlotthauer
- Joe Murdoch

Upon approval and distribution, all QA/QC Program documents shall be in effect for all HDR activities initiated thereafter. All procedures shall be issued as controlled documents and be maintained in three-ring binders. At least one binder set shall be provided per office. The QA/QC Program consists of the materials maintained in these binders, including referenced materials. For ease of employee accessibility and use, a copy of the current QA/QC Program documents shall be maintained on the Intranet in a read only mode.

The QA/QC Program documents have been developed to maximize the congruence between the business requirements of HDR and its clients and the philosophies, concepts and guidance provided by the National (ANSI/ASQ - Q90 Series and ASME - NQA-1) and International (ISO-9000 Series) quality standards. The QA/QC Program Manual has four components:

1. It defines HDR's approach and associated employee responsibilities.

2. The Quality Assurance Procedures (QAPs) verify, or validate, that an appropriate QA/QC Program is in effect. This gives confidence that HDR services consistently fulfill the requirements for the intended purpose.

3. The Quality Control Procedures (QCPs) provide objective evidence that project activities have been completed correctly and satisfy both general and project-specific requirements.

4. The Technical Procedures (TPs) prescribe the "how to do," and in some cases the "what to do," by providing step-by-step instructions. When it is determined that TPs are required to define specific activities, they shall be developed by each Business Class, or Marketing, and coordinated among Business Classes by the National Directors for Business Groups, the Marketing Director, or their assignee.

4.0 CROSS REFERENCES

Not used.

5.0 ATTACHMENTS

Not used.

1.0 PURPOSE

This procedure identifies the overall requirements and guidelines for conducting quality control (QC) reviews and provides additional requirements and guidelines for conducting QC reviews of design documents, project calculations and computer programs.

2.0 DEFINITIONS

See Standard Definitions (QAP-003).

3.0 PROCEDURES

3.1 General Information

QC reviews are an integral component of project activities. They are conducted to verify that the deliverable and supporting documents are complete and understandable, conform to reasonable standards, and meet HDR's and the client's expectations. QC review activities may include verifying one or more of the following: information, assumptions and data used in developing a document; use of proper format; compliance with regulatory and code requirements; and, calculation methods and/or numerical accuracy.

For each project, the Project Manager shall determine the level of detail required during the QC reviews based on an evaluation of many factors, such as project size and complexity, team experience, team continuity, contractual language, insurance, potential second- and third-party liabilities and any technical QC procedures developed specifically for business groups. Any discrepancies between client and consultant standards should be resolved during the project negotiation phase but no later than the start of project activities. The Project Manager shall also identify QC reviewers (to check the accuracy, clarity and completeness of deliverables and supporting documents relative to their intended purpose) and checkers (to check the accuracy of calculations relative to their intended purpose) as part of the project team. Determination of the QC level, personnel and budget is subject to review and approval by the Department Manager.

The Quality Control Plan, developed for each project, contains information on the QC reviews as listed below in 3.2.8.

In general, QC reviews are to be conducted throughout the project. This includes project initiation, preliminary and intermediate stages as well as completion of significant elements, phases or segments of the project.

3.2 QC Review Requirements

Certain requirements, explained in the following subparagraphs, are common to all QC reviews.

3.2.1 Applicability

QC reviews shall be conducted and documented for all correspondence, reports, studies, drawings, specifications, calculations, procurement documents, requisitions and any other documents that either directly or indirectly constitute the deliverable(s). Part of the QC review process is checking the numerical accuracy of calculations.

3.2.2 Personnel

QC reviews shall be conducted by experienced senior personnel who are not otherwise involved in producing the documents but are fully qualified in the process and disciplines required. This provides an impartial assessment that can consider project objectives as well as technical details. The Quality Control Plan shall list the QC reviewers and/or checkers or their qualifications.

3.2.3 Budget

The Quality Control Plan and the Project Guide shall establish a separate budget for the QC reviews which shall be agreed to by the project team.

3.2.4 Schedule

The Quality Control Plan and the Project Guide shall establish a schedule for the QC review activities. All QC reviews shall be completed in a timely manner to avoid disrupting the scheduled completion of project documents. Adequate time shall be scheduled for the QC reviews and subsequent corrections.

3.2.5 Copy for Review

The originator shall retain the original document(s) and send a copy to the individual(s) or organization(s) assigned to conduct the review.

3.2.6 QC Review

All documents shall be verified for conformance to standards and the functional, regulatory and uniformity requirements of the project. This shall be completed before documents are used in-house or released to outside parties, including the client.

The QC review can be done by an organization other than the originator's department if a qualified individual is not available in-house.

3.2.7 Documentation

Each QC review shall be documented by completing a QC form. This form may be one of several types of QC forms developed by various HDR business groups or a form may be developed specifically for a project. (See Attachments 1 through 4 for examples.) The type(s) of QC form to be used shall be identified in the Quality Control Plan and included as an attachment to that plan.

3.2.8 Quality Control Plan

A Quality Control Plan shall be developed for each project and included as an integral component of the Project Guide. At a minimum, the Quality Control Plan shall contain the following:

- Level of detail required during the QC review
- QC reviewers and/or checkers, or the qualifications required
- Number and types of reviews
- Budget
- Schedule
- Form(s) to be used

If any of this information has already been presented in another document, it does not need to be repeated in the Quality Control Plan. However, a cross reference to that document shall be included under the appropriate heading.

3.2.9 Corrections

Upon completion of the QC review activities and receipt of the document(s), the originator shall review the comments and make the necessary changes and additions to the original. Each comment or

change should be annotated with the response or resolution as it is incorporated, or not incorporated, into the original.

If there is a disagreement between the originator and the QC reviewer, the Project Manager or the originator's Department Manager shall assign a third party to resolve the differences.

When all changes are resolved to the reviewer's satisfaction, the reviewer shall date and sign the document in the appropriate place.

3.2.10 Approval

After the QC review, checking and correction activities are completed, but before any of the reviewed documents are used in-house or released to outside parties, the Project Manager shall approve the reviewed material by signing and dating the cover sheet. Before signing the cover sheet, the Project Engineer/Project Manager shall verify that all information on the cover sheet has been completed and all applicable quality control procedures have been followed.

3.2.11 Records

All QC review documents shall be maintained in the project file.

3.3 Design Documents

3.3.1 Review of Drawings

Design drawings shall be reviewed for the following, at a minimum:

- Conformance to functional requirements of the design.
- Conformance to the business group's requirements for standards and uniformity.
- Conformance to the client's requirements for standards and uniformity (Discrepancies between the client's and consultant's standards shall be resolved during the project negotiation phase but no later than the start of the project design phase.).
- Accuracy of the dimensional data and consistency with equipment drawings and other referenced drawings.
- A listing of any special design conditions and applicable design specifications.
- Completion of the review and checking of associated calculations.

3.3.2 Review of Specifications

Design specifications shall be reviewed to determine whether the applicable codes and standards are included and that the document meets good engineering practice and HDR's and the client's standards.

3.4 Project Calculations

3.4.1 Review

The following, at a minimum, shall be verified:

- There is a Calculation Cover Sheet attached. See Attachment 6.
- The calculations have been done on HDR computation paper. (See Attachment 5.).
- The calculation has been assigned a unique, project-specific identification number.
- The input data and assumptions used for the calculations are correct.
- The methods or equations used to complete the calculations are properly referenced and are adequate and appropriate.
- The numerical accuracy of the calculation has been checked, if required.

Once the calculation has been verified and approved, its status shall be changed from preliminary to final. It shall then be issued, initially as revision zero.

3.4.2 Revisions

Once a calculation has been approved, any subsequent revisions shall be verified, checked and approved. A new calculation cover sheet shall be added to the revised calculation with the revised number. This cover sheet shall be signed by the QC reviewer, checker and the originator of the revisions. The entire revised calculation shall be verified.

When a calculation is revised, the originator of the revision shall void the original calculation by writing the word *"SUPERSEDED"* across the cover sheet and identifying the superseding calculation on the cover sheet. Likewise, the cover sheet for the new calculation shall identify the superseded calculation. Both documents shall be retained.

3.4.3 Alternative Calculations

When specified by the Project Manager, alternative calculations that employ different methods or equations shall be used to verify the original calculations. The procedure for documenting the alternative calculation shall be the same as for the original calculations.

When alternative calculations are used, the input data and any assumptions shall be reviewed and checked.

3.5 Computer Programs

3.5.1 Validation and Verification prior to Use

Procured software to be used during project activities shall be developed under a qualified vendor's software quality assurance plan. If not, the software shall be subjected to a rigorous, documented validation process prior to use.

Computer programs, software and codes also require verification upon purchase and installation prior to use on projects. This is to be done by completing a set of test problems and comparing the results obtained with those provided.

3.5.2 Use

Throughout the project, the Project Manager shall maintain an Approved Software/Programs List that documents approval of specific available software and programs. This list shall be maintained as part of the Project Guide. No software or programs shall be used unless on this list.

Computer runs shall be associated with specific calculations and shall be identified, documented and controlled as part of a parent calculation.

Verification shall take place during use as follows:

- Ongoing verification. After initial verification, computer programs, software and codes require reverification at least quarterly or more frequently at the discretion of the Project Manager. The Project Guide shall document the verification status of computer programs, software and codes approved for use on a project.

- Correctly entered data. For all software, verification of input data is required for each computer run. Input data or information shall be copied and included as an attachment to the parent calculation. This verification of input data or information shall be documented as part of the parent calculation.

- Reasonableness review. All computer software runs require a review of output results as part of the parent calculation review process. The QC reviewers are not required to verify the computer output by hand but are to check the output results against a range of expected values.

- Correct program and version. All final calculations (Revision 0, 1, 2, 3, etc.) utilizing computer software/ programs shall be verified by the QC reviewer to determine whether the correct software/programs and versions were used.

- Maintenance of electronic data files. All final calculations (Revision 0, 1, 2, 3, etc.) and parent calculation input and output files shall be maintained on computer disk, CD ROM or other electronic media. All files shall be assigned a "read only" attribute and stored in a locked container with limited personnel access. All stored disks shall be labeled with a unique identifier that relates the disk to the hardcopy calculations. Specific procedures addressing the electronic transmittal and filing of documents will be developed in the future.

3.5.3 Error Resolution

Computer errors identified during the verification process or actual run or by the vendor supplying computer services shall be documented immediately. Such documentation shall be immediately forwarded to the Project Manager for further documentation and corrective action. Nonconformances regarding computer errors shall be resolved before continuing the specific computer use activity. Copies of error notices, and other pertinent information, shall be placed at the front of affected user's manuals.

3.6 Procurement Review

Procurement documents and requisitions shall be reviewed to determine whether the applicable codes, standards and specifications have been included and that the equipment or service requested meets the functional requirements.

3.7 Qualification Testing

When critical design items cannot be verified by other methods described in this procedure, qualification testing can be used. This testing shall demonstrate that the design will function adequately under the worst-case conditions in which the design is intended to operate.

The qualification testing procedure shall clearly define the testing method and the performance criteria to be tested for. Although the qualification test need not have been conducted for the specific project, the method and performance criteria utilized shall meet or exceed those required for the project.

The results of any qualifications testing shall be reviewed during the project design review.

4.0 CROSS REFERENCES

Standard Definitions (QAP-003)
Preparation of Project Guides (QAP-005)
Filing (QAP-007)
Documentation of Project Communications (QAP-006)

5.0 ATTACHMENTS

Attachment 1 - Quality Control Review Report
Attachment 2 - Transportation Project Quality Control Report
Attachment 3 - project Review Report
Attachment 4 - Roadway/Bridge/Railroad/H&S Q.C. Checklist
Attachment 5 - HDR Computation Worksheet
Attachment 6 - Calculation Cover Sheet

ATTACHMENT 1

QUALITY CONTROL REVIEW REPORT

- ♦ Job Name: _____
- ♦ Job Number: _____
- ♦ Project Mgr: _____
- ♦ Dept. Mgr. _____
- ♦ QC Reviewer: _____
- ♦ Date Transmitted: _____
- ♦ Review Deadline: _____
- ♦ Allocated Hours: _____
- ♦ Actual Review Date: _____
- ♦ Actual Hours: _____
- ♦ Document Reviewed: _____

♦ Project Type/Phase:

♦ Study:

- ☐ Concept/Development
- ☐ Draft
- ☐ Final

♦ Design:

- ☐ Schematic
- ☐ Design Development
- ☐ Plans & Specs

♦ Construction

- ☐ _____ % Complete
- ☐ Final Completion

Personnel Involved in Review:

- ☐ Architectural _____
- ☐ Structural _____
- ☐ Mechanical _____
- ☐ Electrical _____
- ☐ Civil _____
- ☐ Process _____
- ☐ Landfill Design _____
- ☐ RR Feasibility _____
- ☐ Permit Applications _____
- ☐ Environmental _____
- ☐ Cost Estimation _____
- ☐ Contracts _____
- ☐ Other _____

Signatures:

_____ Reviewer

_____ Project Manager

INSTRUCTIONS:

1. Project Manager fills out items indicated by (♦) and transmits to assigned QC Reviewer with copy to DM.
2. After review, QC Reviewer returns copies to Project Manager (PM) and Department Manager (DM) (Cover sheet only)
3. PM is responsible for responses to be returned to QC Reviewer with copy of cover letter to DM.

cc: PM, DM

)MMENT:

RESPONSE:

ATTACHMENT 2

HDR ENGINEERING, INC.
TRANSPORTATION PROJECT QUALITY CONTROL REPORT

Instructions: PM provides form to Reviewer about two weeks before scheduled review date. PM distributes completed form as shown below.

Note to Reviewer: Complete and return this form to PM.

Project Name _____

Project Number _____

Project Manager _____ Project Engineer _____

Type of Project _____

Report/Study Title

- ☐ Concept/Schematic
- ☐ Draft
- ☐ Final

Discipline or Area of Review

- ☐ Geometry
- ☐ Traffic
- ☐ Structural

Design

- ☐ Concept
- ☐ Preliminary
- ☐ Final Plans __30% __90% __100%
- ☐ Specifications
- ☐ Bidding Documents
- ☐ Cost Estimate
- ☐ Calculations Check (see attached form)

- ☐ Civil
- ☐ Drainage
- ☐ Electrical
- ☐ Geotechnical
- ☐ Environmental
- ☐ Other

Construction

- ☐ Progress Review ____% Complete
- ☐ Site Visit
- ☐ Close Out Review

Copy of Review Comments Attached	☐ Yes	☐ No
Copy of Checking List Attached	☐ Yes	☐ No

Signature _____ _____
Reviewer Date

cc: Reviewer
Project Manager
Section Manager
Department Manager
Project File

Indicate items that have been checked to date and items that require checking:

	Checking Has Been Performed	Checking Required	Remarks[1]
Field Survey Calculations	☐	☐	
Horizontal Geometry Calculations/Coordinates	☐	☐	
Vertical Geometry Calculations	☐	☐	
Superelevation Transitions	☐	☐	
Drainage	☐	☐	
Hydrologic and Hydraulic Calculations	☐	☐	
Scour Calculations	☐	☐	
Utilities - Existing and Relocated	☐	☐	
Contours and Grading	☐	☐	
Traffic Control Plan	☐	☐	
Signing	☐	☐	
Pavement Markings	☐	☐	
Traffic Signal Plan	☐	☐	
Erosion and Sedimentation Control	☐	☐	
Roadside Development/Landscaping	☐	☐	
Lighting	☐	☐	
Right-of-Way, Property Owners, Areas	☐	☐	
Structure Calculations/Coordination	☐	☐	
Title, Index, Location Map Sheets	☐	☐	
Quantities	☐	☐	
Tabulations	☐	☐	
Summary Sheet	☐	☐	
Cross-Sections	☐	☐	
Typical Sections	☐	☐	
Miscellaneous Details	☐	☐	
Plans	☐	☐	
Profiles	☐	☐	
Stakeout Plans	☐	☐	
Right-of-Way Plans	☐	☐	
Construction Cost Estimate	☐	☐	
Bid Documents and Forms	☐	☐	
Other:	☐	☐	
	☐	☐	
	☐	☐	

[1] Add notes such as the level of checking done and additional sheets attached. On additional sheets, list specifics, such as which quantities, calculations or individual plans (title, index, location, typicals, etc.) have been checked or reviewed as necessary to document what Quality Control has been performed.

Comments	Explanation or Action to be Taken

ATTACHMENT 3

HDR ENGINEERING, INC.
PROJECT REVIEW REPORT

Date _____

Project Name _____

Project Number _____

Project Manager _____

Project Reviewer _____

Type of Project/Phase
- ☐ Scope of Services/Technical Approach
- ☐ Work Plant

Report
- ☐ Field Activities/Data Collection
- ☐ Concept/Outline (Circle)
- ☐ Draft/Final (Circle)

Design
- ☐ Schematic
- ☐ Design Development
- ☐ Drawings and Specifications and Bidding Documents

Construction
- ☐ Progress Review
- ☐ _____% Complete
- ☐ Site Visit
- ☐ Close Out Review

Start-up & Demonstration
- ☐ O&M Training
- ☐ O&M Manual
- ☐ _____

Discipline or Area of Review
- ☐ Architectural by _____
- ☐ Structural by _____
- ☐ Mechanical/HVAC by _____
- ☐ Environmental by _____
- ☐ Process by _____
- ☐ Regulatory Compliance by _____
- ☐ Operability by _____
- ☐ Geological/Hydrogeological by _____
- ☐ Other by _____

Documentation by _____

Signature _____
Reviewer

Copy of Review Comments Attached
☐ Yes ☐ No

cc:
1. Project Manager
2. QA Manager
3. Dept. Manager
4. Marketing Manager
5. _____

ATTACHMENT 4

ROADWAY/BRIDGE/RAILROAD/H&S Q.C. CHECKLIST

PROJECT NAME:

HDR PROJECT NO.:

CLIENT PROJECT NO.:

At a minimum, the items on this checklist will be cross referenced between the roadway, bridge, and railroad plans. These checks are to occur whenever a bridge design is being performed as a part of a project that the Omaha transportation business class has involvement. These reviews are to be performed even when HDR is responsible for only the bridge, roadway, or track design portion of a particular project.

This form is to be retained by HDR Project Manager. All items on this checklist are to be addressed by the project team at the approximate design stages shown. Engineers performing the cross check shall place their initials on this form at each check. Check off each item when it has been cross checked between the bridge, roadway, and railroad plans. Enter N/A if an item is not applicable to the project.

	PRELIMINARY DESIGN	START OF FINAL DESIGN	50% COMPLETE	90% COMPLETE
DATE				
BRIDGE ENGINEER				
ROADWAY ENGINEER				
TRACK ENGINEER				
HORIZONTAL ALIGNMENT				
P.I. Stations & Coordinates				
Curve Lengths & Curve Data				
P.C. & P.T. Stations				
Tangent Bearing Angles Labeled				
Spirals In & Out				
Spiral Simulations				
Minimum Lateral Clearance				
VERTICAL PROFILE				
P.I. Stations, Elevations, & Curve Lengths				
Grades & Control Points				
Minimum Vertical Underclearances				
Handicap Requirements for >5% Grades				
TYPICAL SECTION DATA				
Traffic Lanes & Shoulder Widths				
Profile Grade Location				
Cross Slope on Bridge				
Cross Slope Transitions at Approach Slabs				
Superelevation Rotation Point(s)				
Superelevation Transition Limits				
ROADWAY/TRACK CROSS SECTIONS				
Grading Limits by Grading Contractor				
Grading Limits by Bridge Contractor				
Embankment Slopes at Wing Walls				
Roadway Cross Slope at Start Approach Slabs				
Roadway Cross Slope at End of Bridge Floor				
Embankment Slopes into Approach Guardrails				
Limits of Construction at Riprap/Slope Paving				
INTERSECTION SIGHT DISTANCES AT BRIDGE BARRIER RAILS				
DRAINS AT APPROACH SLABS				
RIPRAP/SLOPE PROTECTION				
HYDRAULIC DATA AT BRIDGE				
APPROACH GUARDRAIL & CONNECTIONS				
SIDEWALK ALIGNMENT AT GUARDRAILS				

ROADWAY/BRIDGE/RAILROAD/H&S Q.C. CHECKLIST

QUALITY CONTROL COMMENT SHEET

(QC SHEET)

Project _____ Proj. Mgr. _____
Project No. _____ Reviewer _____
Review Stage _____ Sheet _____ of _____
Date: _____

Page	Dwng No.	Cmt No.	Comment	Init.	Response	Date	Init.

Job No.	No.

Computation

ATTACHMENT 5

HDR COMPUTATION WORKSHEET

HDR

Project	Computed	Date
Subject	Checked	Date
Task	Sheet	Of

ATTACHMENT 6

CALCULATION COVER SHEET

CALCULATION NUMBER_____-CAL.-_____REV._____

TITLE:_____PAGE 1 OF_____

PURPOSE:_____

_____

_____

_____

_____

CONCLUSION:_____

_____

_____

_____

_____

ORIGINATOR:_____DATE:_____

QC REVIEW/
CHECKED BY:_____DATE:_____

APPROVED BY:_____DATE:_____

SUPERSEDES CALCULATION NO.___ SUPERSEDED BY CALCULATION NO.____

PRELIMINARY ___ FINAL _____

APPENDIX F

HEALTH AND SAFETY

1.0 CORPORATE HEALTH AND SAFETY POLICY STATEMENT

HDR has always been committed to providing our employees with a safe and healthful workplace. No activity conducted by HDR employees is so important that we cannot afford to conduct the activity in a safe and healthful manner. This written program is testament to HDR's commitment to employee health and safety.

We believe every employee is entitled to a safe and healthful work place, and should contribute to maintaining such an environment. It is for this reason that HDR maintains a corporate policy to comply with all occupational health and safety regulations. HDR also accepts the responsibility for providing appropriate health and safety training for our employees, and providing employees with the means to conduct their activities in a safe manner.

Our management and supervisory personnel are encouraged to develop and foster attitudes that are conducive to providing a safe and healthful workplace for our employees. These individuals are also responsible for the implementation of health and safety practices throughout the organization.

Finally, we expect all employees to be genuinely committed to cooperate with all aspects of our health and safety program while conducting their activities. Only through the joint effort of our entire work force can we succeed in providing all of our people with a work place that is free from unnecessary dangers.

Richard Bell
President and Chief Executive Officer
HDR, Inc.

3.5 All HDR Employees

Every HDR employee has a responsibility to comply with all provisions of the Corporate Health and Safety Program. These responsibilities include:

1. Being thoroughly familiar with the Corporate Health and Safety Program.

2. Attending initial health and safety training courses, awareness training sessions, and any subsequent health and safety seminars.

3. Proper maintenance of personal protective equipment in their possession.

4. Adhering to health and safety work rules, regulations, procedures and instructions, and precautionary measures necessary to avoid unsafe practices & non-compliance with OSHA regulations at their respective project sites.

5. Reporting to their Department Manager and OSC all injuries, illnesses and near-miss incidents (see Section 7.1 for definition of near-miss incident).

6. Conducting only those activities that they believe they can do safely.

HDR BUSINESS DEVELOPMENT PROJECT SAFETY WORKSHEET

Today's Date: 11/29/00

Proposal No.: _____

Proposal Manager: _____

Client Name: _____

Title of Proposal: Wrangell Airport Master Plan

Summarize the Tasks and Services to be provided by HDR during this Proposed Phase of the Project:

HDR Service Types. Check All That Apply.

1. In-house services to be provided by HDR personnel.

   A. ✓ Generate/Review/Edit Design Drawings.

   B. _____ Generate/Review/Edit Specifications, O&M Manual(s) or Technical Reports/Documents.

   C. _____ Coordinate/Arrange/Organize the Transfer or Communication of Data.

   D. _____ Not applicable.

   E. _____ Other In-house Services. Explain:_____

   _____

2. Best description of on-site or out-of-office services to be provided by HDR.

   A. ✓ On-site observation.

   B. ✓ Walk-through survey.

   C. ✓ Data gathering.

   D. ✓ Inspection.

   E. _____ Structural Condition Survey.

   F. _____ Other out-of-office service. Explain:_____

   _____

   G. _____ Not Applicable.

3. Best description of on-site or out-of-office project location.

   A. _____ Construction/demolition or related-activities site.

   B. _____ Industrial facility.

   C. _____ Municipal water/wastewater facility or fluid transfer system.

   D. _____ Health care, justice facility or other commercial building.

   E. _____ Landfill or potential waste site.

   F. _____ Natural habitat site with minimal previous development.

   G. _____ Wilderness or remote locations.

   H. _____ Track, roadway or other ground transportation thoroughfare.

   I. _____ Open waterway site.

   J. ✓ Airport related site.

   K. _____ Research facility.

   L. _____ Federal government facility/site.

M. _____ Non-ionizing radiation tower site or communications facility.

N. _____ Waste recovery/recycling facility/site.

O. _____ Power generation facility/site.

P. _____ Known or highly suspected Hazardous Waste Site.

Q. _____ Rail or highway bridge.

R. _____ Other out-of-office location. Explain:

S. _____ Not Applicable.

4. If an applicable item in #2 was checked above, list others likely to be on-site when HDR personnel are on-site.

A. _____ General contractor.

B. _____ Subcontractor.

C. _____ Another A/E type firm.

D. ✓ Client rep.

E. ✓ Building or site owner or manager, if different from client.

F. _____ Government regulator or inspector.

G. _____ Equipment or material vendor.

H. _____ General public.

I. ✓ Municipal or utility employee.

J. _____ Not applicable.

K. _____ Others on site. Explain:

5. Is it likely that HDR will retain any subconsultants for this project who may be required to be on site? NO

6. Check the type of OSHA risks that may effect HDR personnel during the course of completion of this project *(key words underlined)*.

A. _____ Confined spaces or potential for engulfment.

B. _____ Working at elevated heights or platforms.

C. _____ Trenches or excavations.

D. _____ Electrical hazards other than office.

E. _____ Inadequate ventilation.

F. _____ Exposure to air contaminants.

G. ✓ Exposure to excessive noise.

H. ✓ Vehicle traffic.

I. _____ Working over or near a waterway.

J. ✓ Working near airplane runway/taxiway.

K. _____ Potential contact with solid or liquid chemicals/wastes.

L. _____ Potential exposure to a biohazard/sewage/landfill wastes.

M. _____ Radioactive material.

N. _____ Non-ionizing radiation (includes sunburn)

O. _____ Asbestos.

P. _____ Lead-based paint.

Q. ✓ Near mobile machinery or other non-vehicle transportation.

R. ✓ Near facility equipment with moving parts.

S. _____ HDR personnel not knowing or recognizing safety risks.

T. _____ Other risks. (i.e., Heat/Cold Stress, Biological – snakes, ticks, poison ivy, Large Animals – bears, moose, etc.) Explain:

_____

After this form is completed, discuss any conditions requiring safety clarification or compliance issues with the OSC & Corporate Safety, and place copy in the project file.

9.0 PERSONNEL POLICIES

9.1 Drug Abuse Policy

HDR has an obligation to its employees, clients, and the public at large to take reasonable and appropriate steps to provide a drug-free workplace, and prevent drug abuse by its employees. This policy is based on the company's concern regarding the safety, health and welfare of its employees, their families, its clients, and the community. Consistent with this commitment, the company strictly prohibits:

a) The presence of employees on the job while under the influence of intoxicants, drugs, or any other controlled substances.

b) The use, possession, transfer, or trafficking of intoxicants, illegal drugs, or controlled substances in any amount, in any manner, or at any time, either on company premises or while conducting company business.

c) The use of company property, including company vehicles and telephones, or an employee's position within the company to make, transfer, or traffic intoxicants, illegal drugs, or controlled substances.

d) Any other use, possession, or trafficking of intoxicants, illegal drugs, or controlled substances in a manner which has an adverse impact on the company.

e) Failing to report a drug statute conviction to the company within five days of such conviction.

Any employee who is under medication or taking any drug which may affect the employee's ability to perform his or her job in a safe and productive manner must report such use to his/her supervisor. Supervisors, in conjunction with personnel staff, will determine if the employee should remain at work, be restricted in his or her duties, or be sent home.

The company has the right to:

a) Discipline employees, including dismissal for convictions regarding illegal use, possession or trafficking of drugs.

b) Search, based on reason to believe this policy is being violated, an employee's person, locker, desk, vehicle, work station, brief case, tool box, wallet, purse, lunch pail, pockets, and personal belongings. Entry on company premises constitutes consent to search(es) and inspections.

c) Test employees, including blood or urine tests, and order medical examinations, for the purpose of determining if the employee has engaged in illegal drug use, where not prohibited by state law.

d) Take disciplinary action against employees who violate this company policy, including refusal to submit to testing, inspection, or searches. Employees also may be suspended pending outcome of an investigation regarding compliance with this policy.

e) Recommend remedial measures for employees in lieu of dismissal.

Job applicants may be required to undergo drug testing prior to hire, and be required to agree in writing to permit such tests and company use of their results, where not prohibited by state law. Those job applicants who fail such tests will not be offered employment.

Notification to law enforcement agencies will be made, at the discretion of the company, regarding violations of this policy as appropriate and/or necessary.

The HDR ***Drug-Free Workplace Policy***, summarizing the information presented above, is presented on the following page.

9.2 Safety Program Enforcement

HDR firmly believes that all employees want to do a good job, and that, given the proper tools and training, will do a good job. Therefore, it is expected that our employees will follow the procedures set forth in this Program. If deficiencies are discovered involving the disregard or violation of proper safety rules and guidelines set forth in this Program, the offending employee will be retrained as necessary, to reinstruct the employee on the proper conduct expected. This retraining, and the circumstances necessitating it, will be documented in writing and retained in the employee's personnel file for a minimum of one year. The Department Manager is responsible for performing these actions.

If, after retraining has been accomplished, the offending employee continues to exhibit a disregard for the same or similar safety procedures, then the responsible Department Manager shall consult with the HDR Corporate Director of Safety and the Chief Operating Officer of the business company. Typically, repeated or blatant disregard for safety rules will result in either removal for work on that project, as well as involvement in future projects involving similar situations or hazards or dismissal.

All HDR employees are expected at all times when engaged in work activities on behalf of HDR, to comply with the health and safety policies and procedures as discussed in this Health and Safety Program.

DRUG-FREE WORKPLACE POLICY

Drug abuse is a concern facing every part of our society. It is a costly and dangerous problem involving lost productivity, increased absenteeism, poor performance, more on-the-job injuries, higher medical costs and rising crime rates. HDR, Inc. and its subsidiaries, hereinafter "HDR", is committed to providing its employees a safe work environment and to promoting high standards of employee health. Equally important is HDR's commitment to providing its clients the highest level of service.

Consistent with this philosophy, the manufacture, distribution, possession, use or unfitness for work because of drugs is prohibited while you are working or while you are on HDR premises. "Drug" includes alcoholic beverages and prescription drugs, as well as illegal inhalants and illegal drugs. This policy excludes prescription drugs when taken as directed by a licensed doctor.

Although we realize drug abuse can be successfully treated and are willing to work with employees who may suffer from such problems, it is the employee's responsibility to seek assistance before drug problems lead to disciplinary action. Once a violation of this policy occurs, an employee's willingness to seek company or outside assistance will not excuse the violation and will not necessarily prevent corrective disciplinary action.

It is a condition of your employment with HDR that you: 1) Abide by the terms of this policy and 2) Notify HDR's Legal Department of any criminal drug conviction occurring in the workplace no later than five (5) days after the date of such a conviction. This information will remain confidential, except as necessary to fulfill the requirements of this policy or to comply with applicable laws and regulations.

If you are so convicted or are found to be in violation of this policy in any manner you will be subject to discipline and discharge and may be required, as a condition of your continued employment with HDR, to satisfactorily participate in a drug abuse assistance or rehabilitation program that has been approved for such purposes by a federal, state or local health, law enforcement or other appropriate agency. You will also be placed on permanent probation with HDR. A second conviction or policy violation will result in your immediate termination from HDR.

Drug and alcohol testing on a scheduled, random or cause basis may be implemented if required by a contract with a client and where not prohibited by state law. Employees effected by such testing will be provided additional details. A copy of the policy may be obtained from the Human Resources Department, HDR, Inc., 8404 Indian Hills Drive, Omaha, NE 68114.

While we have no intention of interfering with the private lives our employees, we expect employees to report to work in a condition that will allow them to perform their duties in a safe, effective and efficient manner. Involvement with drugs off the job, as well as on-the-job, can present a substantial risk not only to the user but also to others, and use of these drugs may be a sign of chemical dependency. Chemical dependency can be treated; assistance regarding drug counseling and rehabilitation services may be obtained through the Employee Assistance Program (where applicable) or by contacting your family physician, local hospital; a drug treatment facility, local mental health agency or a member of the clergy. Human Resources or your supervisor can be of assistance in determining what insurance and company benefits are available to help.

U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION	**Date:** 5/31/84 **Initiated by:** AAS-300	**AC No:** 150/5370-2C **Change:**

1. PURPOSE. This advisory circular (AC) sets forth guidelines concerning the operational safety on airports during construction, to assist airport operators in complying with Part 139, Certification and Operation: Land Airports Serving Certain Air Carriers, of the Federal Aviation Regulations (FAR), and with the requirements of Federally funded construction projects. Construction activity is defined as the presence and movement of personnel, equipment, and materials in any location which could infringe upon the movement of aircraft. For noncertificated airports and airports with no grant agreements, application of these provisions will help maintain the desired level of operational safety during periods of construction.

2. CANCELLATION. AC 150/5370-2B, Operational Safety on Airports With Emphasis on Safety During Construction, dated October 9, 1981, is canceled.

3. RELATED READING MATERIAL. All references cited herein are available for inspection in any Federal Aviation Administration (FAA) regional office.

a. The Federal Aviation Regulations are sold by the Superintendent of Documents (AC 00-44, Status of Federal Aviation Regulations, current edition, contains a price list and ordering instructions).

b. AC 150/5370-10, Standards for Specifying Construction of Airports, is also sold by the Superintendent of Documents (AC 00-2, Advisory Circular Checklist, current edition, contains ordering instructions).

4. BACKGROUND. Various ACs which detail all major elements of safe, efficient airport design and construction are available. However, operational safety on airports may be degraded by construction hazards or marginal conditions that develop after an airport has been opened or approved for operation. This AC addresses that problem.. NOTE: Airports which have received Federal assistance (grants, real or personal property) and airports certificated under FAR Part 139 have mandatory requirements related to this subject.

5. GENERAL.

a. The airport operator is responsible for full compliance with the requirements of FAR Part 139 for certificated airports and with the provisions of Federal grant agreements when applicable. Adherence to the following provisions will materially assist the airport operator in providing the level of safety required. Local FAA Airports offices have technical expertise to assist airport operators in all safety matters on airports. (See AC 150/5000-3, Address List for Regional Airports Divisions and Airports District/Field Offices, current edition.)

b. Each bidding document (construction plans and/or specifications) for airport development work or air navigation facility (NAVAID) installation involving aircraft operational areas should incorporate a section on safety on airports during the construction activity. The section, as a minimum, should contain the appropriate provisions outlined in Appendix 1 to this AC.

c. The airport operator should pay particular attention to the pullback distances and clearances for any maintenance activities and emergencies that occur on airports. These include activities which involve maintenance equipment - such as mowing machines, snowplows, lighting equipment - as well as emergency standbys for firefighting and rescue equipment.

d. Where feasible and where operational safety is not affected, the airport operator may choose to keep open operational areas adjacent to construction activity during construction rather than close them to aircraft activity.

e. At airports that are undergoing a multiyear major redevelopment, a comprehensive construction safety plan should be developed. This safety plan may contain deviations from the criteria outlined in Appendix 1 of this AC so long as they are based upon a commitment by the airport operator and the users to provide the maximum clearances possible between construction activities and aircraft within the limits imposed by local conditions.

6. COORDINATION OF AIRPORT CONSTRUCTION ACTIVITIES. Construction activities on an airport, in proximity to, or affecting aircraft operational areas or navigable airspace, should be coordinated with the FAA and airport users prior to initiating such activities. In addition, basic responsibilities and procedures should be developed and disseminated to instruct construction personnel in airport procedures and for monitoring construction activities for conformance with safety requirements. These and other safety considerations should be addressed in the earliest stages of project formulation and incorporated in the contract specifications. Construction areas located within safety areas requiring special attention by the contractor should be clearly delineated on the project plans. The airport operator should closely monitor construction activity throughout its duration to ensure continual compliance with safety requirements.

a. Formal Notification. A formal notification to the FAA is required by regulation for certain airport projects. For instance, FAR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports, requires that FAA be notified in writing whenever a non-Federally funded project involves the

construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; and the deactivating or abandoning of an entire airport. Formal notification is made by submitting FAA Form 7480-1, Notice of Landing Area Proposal, to the nearest FAA district office or FAA regional office. (See AC 70-2, Airspace Utilization Considerations in the Proposed Construction, Alteration, Activation and Deactivation of Airports, current edition.) Also, any person proposing any kind of construction or alteration of objects that affect navigable airspace, as defined in FAR Part 77, Objects Affecting Navigable Airspace, is required to notify the FAA. FAA Form 7460-1, Notice of Proposed Construction or Alteration, should be used for this purpose. (See AC 70/7460-2, Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace, current edition.)

b. Work Scheduling and Accomplishment. Predesign, preconstruction, and prebid conferences provide excellent opportunities to introduce the subject of airport operational safety during construction. All parties involved, including the sponsor's engineer and contractors, should integrate operational safety requirements into their planning and work schedules as early as practical. Also, responsibilities should be clearly established for continuous monitoring and compliance with the requirements assigned and for vigilance to detect areas needing attention due to oversight or altered construction activity. When construction is being planned on FAR Part 139 certificated airports, the responsible airport safety (certification) inspector should be directly involved at all stages, from predesign through final inspection.

c. Safety Considerations. The following is a partial list of safety considerations which experience indicates will need attention during airport construction.

(1) Minimum disruption of standard operating procedures for aeronautical activity.

(2) Clear routes from firefighting and rescue stations to active airport operations areas and safety areas.

(3) Chain of notification and authority to change safety oriented aspects of the construction plan.

(4) Initiation, currency, and cancellation of Notice to Airmen (NOTAMs).

(5) Suspension or restriction of aircraft activity on airport operations areas.

(6) Threshold displacement and appropriate temporary lighting and marking.

(7) Installation and maintenance of temporary lighting and marking for closed or diverted aircraft routes on airport operations areas.

(8) Revised vehicular control procedures or additional equipment and manpower.

(9) Marking/lighting of construction equipment.

(10) Storage of construction equipment and materials when not in use.

(11) Designation of responsible representatives of all involved parties and their availability.

(12) Location of construction personnel parking and transportation to and from the work site.

(13) Marking/lighting of construction areas.

(14) Location of construction offices.

(15) Location of contractor's plants.

(16) Designation of waste areas and disposal.

(17) Debris cleanup responsibilities and schedule.

(18) Identification of construction personnel and equipment.

(19) Location of haul roads.

(20) Security control on temporary gates and relocated fencing.

(21) Noise pollution.

(22) Blasting regulation and control.

(23) Dust control.

(24) Location of utilities.

(25) Provision for temporary utilities and/or immediate repairs in the event of disruption.

(26) Location of power and control lines for electronic/visual navigational aids.

(27) Additional security measures required if FAR Part 107, Airport Security, is involved.

(28) Marking and lighting of closed airfield pavement areas.

(29) Coordination of construction activities during the winter with airport snow removal plan.

(30) Phasing of work.

(31) Shutdown and/or protection of airport electronic/visual navigational aids.

(32) Smoke, steam, and vapor controls.

(33) Notify crash/fire/rescue personnel when working on water lines.

(34) Provide traffic directors/wing walkers, etc., as needed to assure clearance in construction areas.

d. Guidelines for Proximity of Construction Activity to Airport Operations Areas. The guidelines contained in Appendix 1 are for use in the preparation of plans and specifications when construction activities are to be conducted in locations which may interfere with aircraft operations. They should be adapted to the needs of a particular project and should not be incorporated verbatim into project specifications.

7. EXAMPLES OF HAZARDOUS AND MARGINAL CONDITIONS. Analyses of past accidents and incidents have identified many contributory hazards and conditions. A representative list follows:

a. Excavation adjacent to runways, taxiways, and aprons.

b. Mounds or stockpiles of earth, construction material, temporary structures, and other obstacles in proximity to airport operations areas and approach zones.

c. Runway surfacing projects resulting in excessive lips greater than 1 inch (2.54 cm) for runways and 3 inches (7.62 cm) for edges between old and new surfaces at runway edges and ends.

d. Heavy equipment, stationary or mobile, operating or idle near airport operations areas or in safety areas.

e. Proximity of equipment or material which may degrade radiated signals or impair monitoring of navigational aids.

f. Tall but relatively low visibility units such as cranes, drills, and the like in critical areas such as safety areas and approach zones.

g. Improper or malfunctioning lights or unlighted airport hazards.

h. Holes, obstacles, loose pavement, trash, and other debris on or near airport operations areas.

i. Failure to maintain fencing during construction to deter human and animal intrusions into the airport operation areas.

j. Open trenches alongside pavement.

k. Improper marking or lighting of runways, taxiways, and displaced thresholds.

l. Attractions for birds such as trash, grass seeding, or ponded water on or near airports.

m. Inadequate or improper methods of marking temporarily closed airport operations areas including improper and unsecured barricades.

n. Obliterated markings on active operational areas.

NOTE: Safety area encroachments, improper ground vehicle operations, and unmarked or uncovered holes and trenches in the vicinity of aircraft operating surfaces are the three most recurring threats to safety during construction.

8. ASSURING OPERATIONAL SAFETY. The airport operator is responsible for establishing and using procedures for the immediate notification of airport users and the FAA of any conditions adversely affecting operational safety at the airport. If construction operations require shutdown of a navigational aid from service for more than 24 hours or in excess of 4 hours daily on consecutive days, a 45-day minimum notice is desirable prior to the facility shutdown. Notification of construction, rough pavement, weather-caused effects, bird hazards, and other conditions affecting the use of the airport is usually made by NOTAM issued by Flight Service Stations. FAA Air Traffic facilities and Airports district/field offices will assist in the notification process. Airmen or other persons engaged in aviation activities are encouraged to report safety related airport conditions to airport management, the FAA or through the use of the National Aeronautics and Space Administration's Aviation Safety Reporting System.

9. VEHICLES ON AIRPORTS. Vehicular activity on airport movement areas should be kept to a minimum. Where vehicular traffic on airport operation areas cannot be avoided, it should be carefully controlled. A basic guiding principle is that the aircraft always has the right-of-way. Some aspects of vehicle control and identification are discussed below. It should be recognized, however, that every airport presents different vehicle requirements and problems and therefore needs individualized solutions so that vehicle traffic does not endanger aircraft operations.

a. Visibility. Vehicles which routinely operate on airport operations areas should be marked/flagged for high daytime visibility and, if appropriate, lighted for nighttime operations. Vehicles which are not marked and lighted should be escorted by one that is equipped with temporary marking and lighting devices. (See AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport, current edition.)

b. Identification. It is usually desirable to be able to identify visually specific vehicles from a distance. It is recommended that radio equipped vehicles which routinely operate on airport operations areas be permanently marked with identifying characters on the sides and roof. (See AC 150/5210-5.) Vehicles needing intermittent identification could be marked with tape or with magnetically attached markers which are commercially available. Whenever possible, vehicles should be purchased with the recommended markings and lighting.

c. Noticeability. Construction vehicles/equipment should have automatic signalling devices to sound an alarm when moving in reverse.

d. Movement. The control of vehicular activity on airport operations areas is of the highest importance. Airport management is responsible for developing procedures, procuring equipment, and providing training regarding vehicle operations to ensure aircraft safety during construction. This requires coordination with airport users and air traffic control. Consideration should be given to the use of two-way radio, signal lights, traffic signs, flagman, escorts, or other means suitable for the particular airport. The selection of a frequency for two-way radio communications between construction contractor vehicles and the air traffic control (ATC) tower must be coordinated with the ATC tower chief. At nontower airports, two-way radio control between contractor vehicles and fixed-base operators or other airport users should avoid frequencies used by aircraft. It should be remembered that even with the most sophisticated procedures and equipment, systematic training of vehicle operators is necessary to achieve safety. Special consideration should be given to training intermittent operators, such as construction workers, even if escort service is being provided.

10. INSPECTION. Frequent inspections should be made by the airport operator or a representative during critical phases of the work to ensure that the contractor is following the prescribed safety procedures and that there is an effective litter control program.

11. FAA SAFETY RESPONSIBILITIES. FAA Airports engineers and certification inspectors have specific responsibilities regarding operational safety on certificated airports before and during periods of construction activity. Their particular area of concern will be directed towards construction within safety areas, and they will be involved in the following functions:

a. Review of plans to determine limits of work and possible safety problem areas.

b. Give special attention to the development of the safety plan which is a part of the plans and specifications.

c. Advise FAA elements such as regional Flight Standards, Air Traffic, and Airway Facilities of the construction activities and the safety plan.

d. Ensure that users of the facilities have ample warning of the proposed construction so that they may make advanced plans to change their operations.

e. FAA Airports engineers and certification inspectors should participate in the predesign and preconstruction conferences if the project involves a complex safety plan. Also, they should participate in construction inspections and in the inspection of the finished work to determine that there are no safety violations to FAR Part 139.

/s/

Leonard E. Mudd

Director, Office of Airport Standards

APPENDIX 1. SPECIAL SAFETY REQUIREMENTS DURING CONSTRUCTION

1. RUNWAY ENDS.

Construction equipment normally should not penetrate the 20:1 approach surface.

2. RUNWAY EDGES.

Construction activities normally should not be permitted within 200 feet of the runway centerline. However, construction may be permitted within 200 feet of the runway centerline on a case-by-case basis with approval of the airport operator, the FAA and the users.

3. TAXIWAYS AND APRONS.

Normally, construction activity setback lines should be located at a distance of 25 feet plus one-half the wingspan of the largest predominant aircraft from the centerline of an active taxiway or apron. However, construction activity may be permitted up to the taxiway and aprons in use provided that the activity is first coordinated with the airport operator, the FAA and the users; NOTAMs are issued; marking and lighting provisions are implemented; and it is determined the height of equipment and materials is safely below any part of the aircraft using the airport operations areas which might overhang those areas. An occasional passage of an aircraft with wingspan greater than 165 feet should be dealt with on a case-by-case basis.

4. EXCAVATION AND TRENCHES.

a. Runways. Excavations and open trenches may be permitted up to 200 feet from the centerline of an active runway, provided they are adequately signed, lighted and marked. In addition, excavation and open trenches may be permitted within 200 feet of the runway centerline on a case-by-case basis, that is, cable trenches, pavement tie-ins, etc., with the approval of the airport operator, the FAA and the users.

b. Taxiways and Aprons. Excavation and open trenches may be permitted up to the edge of structural taxiway and apron pavements provided the dropoff is adequately signed, lighted and marked.

5. STOCKPILED MATERIAL.

Extensive stockpiled materials should not be permitted within the construction activity areas defined in the preceding four sections.

6. MAXIMUM EQUIPMENT HEIGHT.

Notice of proposed construction shall be submitted to the appropriate Airports district office for review prior to the placement of construction equipment on airports. The guiding criteria involving FAR Part 139 certificated airports and grant agreement airports is that all construction plans and specifications require direct coordination with the appropriate Airports district, field, or regional office. In addition, airports should file FAA Form 7460-1 when equipment is expected to penetrate any of the surfaces defined above in paragraphs 1, 2, and 3. Airport operators are reminded that FAR Part 157 requires prior notice to construct, realign, alter, or activate any runway/landing area or associated taxiway for any project which is non-Federally funded.

7. PROXIMITY OF CONSTRUCTION ACTIVITY TO NAVIGATIONAL AIDS. Construction activity in the vicinity of navigational aids requires special consideration. The effect of the activity and its permissible distance and direction from the aid must be evaluated in each instance. A coordinated evaluation by the airport operator and the

FAA is necessary. Technical involvement by FAA regional Airports, Air Traffic, Flight Standards, and Airway Facilities Specialists is needed as well as construction engineering and management input. Particular attention needs to be given to stockpiling materials as well as to the movement and parking of equipment which may interfere with line-of-sight from the tower or interfere with electronic emissions. (see AC 150/5300-2D, Airport Design Standards - Site Requirements for Terminal Navigational Facilities, current edition, for critical areas of NAVAIDS.)

8. CONSTRUCTION VEHICLE TRAFFIC.

With respect to vehicular traffic, aircraft safety during construction is likely to be endangered by four principle causes: increased traffic volume, nonstandard traffic patterns, vehicles without radio communication and marking, and operators untrained in the airport's procedures. Because each construction situation differs, airport management must develop and coordinate a construction vehicle traffic plan with airport users, air traffic control and the appropriate construction engineers and contractors. This plan, when signed by all participants becomes a part of the contract. The airport operator is responsible for coordinating and enforcing the plan.

9. LIMITATION ON CONSTRUCTION.

a. Open flame welding or torch cutting operations should be prohibited unless adequate fire and safety precautions are provided and have been approved by the airport operator. All vehicles are to be parked and serviced behind the construction restriction line and/or in an area designated by the airport operator.

b. Open trenches, excavations, and stockpiled material at the construction site should be prominently marked with orange flags and lighted with flashing yellow light units (acceptable to the airport operator and the FAA) during hours of restricted visibility and/or darkness. Under no circumstances are flare pots to be near aircraft turning areas.

c. Stockpiled material should be constrained in a manner to prevent movement result of aircraft blast or wind. Material should not be stored near aircraft turning areas or movement areas.

10. MARKING AND LIGHTING OF CLOSED OR HAZARDOUS AREAS ON AIRPORTS.

The construction specifications should include a provision requiring the contractor to have a man on call 24 hours per day for emergency maintenance of airport hazard lighting and barricades.

a. Permanently Closed Runways and Taxiways. For runways and taxiways which have been permanently closed, the lighting circuits should be disconnected. With runways, the threshold markings, runway designation marking, and touchdown zone markings should be obliterated, and crosses should be placed at each end at 1,000 foot (300 m) intervals. With taxiways, a cross is placed at each entrance of the closed taxiway.

b. Temporarily Closed Runways and Taxiways. Temporarily closed runways are treated in the same manner as in paragraph 10a except runway markings are not obliterated. Rather, crosses are usually of the temporary type (constructed of

material such as fabric or plywood), and they are required only at runway ends. The crosses should be located on top of the runway numerals. For temporary marking, the dimensions of the crosses may be reduced to permit use of standard sheets of 4 by 8 foot (1.22 by 2.44 m) plywood. Temporarily closed taxiways are usually treated as an unusable area as explained in paragraph 10d.

c. Closed Airports. When all runways are closed temporarily, the runways are marked as in paragraph 10b, and the airport beacon is turned off. When all runways are closed permanently, the runways are marked as in paragraph 10a, the airport beacon is disconnected, and a cross is placed in the segmented circle or at central location if no segmented circle exists.

d. Hazardous Areas. Hazardous areas, in which no part of an aircraft may enter, are indicated by use of barricades with alternate orange and white markings. The barricades are supplemented with orange flags at least 20 by 20 inches (50 by 50 cm) square and made and installed so that they are always in the extended position and properly oriented. For nighttime use, the barricades are supplemented with flashing yellow lights. The intensity of the lights and spacing for barricades, flags, and lights must be such to delineate adequately the hazardous area.

e. Notices to Airmen (NOTAMs). The airport operator should provide information on closed or hazardous conditons to the local air traffic control facility (control tower, approach control, center, flight service station) so that a NOTAM can be issued.

f. Stabilized Areas. Holding bays, aprons, and taxiways are sometimes provided with shoulder stabilization to prevent blast and water erosion. This stabilization may have the appearance of a full strength pavement but is not intended for aircraft use. Usually the taxiway edge marking will define this area, but conditions may exist such as stabilized islands or taxiway curves where confusion may exist as to which side of the edge stripe is the full strength pavement. Where such a condition exists, the stabilized area should be marked with 3 foot (1 m) stripes perpendicular to the edge stripes. On straight sections, the marks should be placed at a maximum of 100 foot (30 m) spacing. On curves, the marks should be placed a maximum of 50 feet (15 m) apart between the curve tangents. The stripes should be extended to 5 feet (1.5 m) from the edge of stabilized area or to 25 feet (7.5 m) in length, whichever is less.

g. Runway Shoulder Marking. Usually the runway side stripes will indicate the edges of the full strength pavement. However, conditions may exist, such as exceptionally wide runways, where there is a need to indicate the area not intended for use by aircraft. In such cases, chevrons should be used.

11. TEMPORARY RUNWAY THRESHOLD DISPLACEMENTS.

Identification of temporary runway threshold displacements should be located outboard of the runway surface. These could include outboard lights, Runway End Identification Lights (REILS), and markings. The extent of the marking and lighting should be directly related to the duration of the displacement as well as the type and level of aircraft activity.

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Contents

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Thought for the Day.....

If an accident or incident happened on MY airport, and the NTSB conducted the investigation, how would they evaluate the level of safety provided at this field?

How it all began....

It was a dark and stormy afternoon. ...literally. The weather report: sky partially obscured; 120/11M200⊕ ¾ FG 41/40 29.55. Read: winds 120 @ 11; measured ceiling 200 overcast; ¾ mile visibility in fog; temperature/dew point 41/40; altimeter 29.55; Additional notes included these: RVR not available, .4 of the sky hidden by fog, 1 inch of snow on the ground, rain ended 1210.

The place was Detroit; the time was 1245 CST. and the NTSB report continues:

> On December 3, 1990, at 1345 eastern standard time, Northwest Airlines (NWA) flight 1482, a McDonnell Douglas DC-9 and Northwest Airlines flight 299, a Boeing 727 (B-727), collided near the intersection of runways 09/27 and 03C/21C)at Detroit Metropolitan Wayne County Airport (DTW), Romulus, Michigan.

As we all know now, this accident generated a flurry of activity with respect to airport marking, lighting, and signs. It consolidated an effort which the NTSB had recommended in 1986, i.e., "In cooperation with terminal air traffic managers, airport managers, airline representatives, and pilot groups, determine the most effective signs, markings, and procedures,

from an operational and human performance perspective, to prevent pilot-induced runway incursions and issue an advisory circular to disseminate the information to airport managers and pilot organizations."

We have come a long way since then, and airport marking, lighting, and signs have been standardized, at certificated airports with nearly virtual consistency throughout the nation.

Standardization and uniformity were two basic steps that had to be taken in an effort to eliminate some of the causes of runway incursions. The effort undertaken by the airports certificated under 14 CFR part 139 took nearly 6 years to accomplish. Airports developed and implemented sign plans, overcame many hurdles in obtaining the required signs, and coordinated with users, FAA airport inspectors and others, who signed their approval to the proposed sign plans.

In a study that was conducted prior to these actions, pilots identified signs at airports to be one of the most difficult problems. They cited the lack of uniformity in signs, meanings of signs, sign location, and sign maintenance. Many pilots who were flying into airports for the first time reported their inability to understand local references. They did not know the location of the "penalty box" or the "southside route."

About two-thirds of the way into the implementation process, when many signs had been installed and a sense of order was being established, pilots were again questioned about signs on airports. The positive response was impressive. Most pilots were finding the order and predictability engendered by the sign program of great assistance in taxiing. Thus, meeting the provisions of NTSB's recommendation has had a pay-off in raising the level of safety and in making the airport a much more sensible environment.

An event on an airport, whether it is an accident or incident, subjects the airport to extensive scrutiny. This means that conditions which may or may not be related to the event also come under intense examination. And anything out of place on the airport is subject to being investigated and noted for action. NTSB is interested in the level of safety that exists on the entire airport, not just those items that are directly connected to the event being investigated. This is a good point to keep in mind, the bottom line being this: If there's an event on the airport, what will NTSB find when they come to investigate? In other words, how will the airport measure up...in *every* safety respect?

AIRPORT SAFETY

THE BIG PICTURE

The first step toward improving safety involves taking inventory of your airport as an integral part of a community. This is an important step in being a good neighbor.

◆ General aviation airports have a special stake in assuring a community that the airport is an asset and acts responsibly. Protection for both airport users and airport visitors is a matter that each general aviation airport is encouraged to address.

◆ Part 139 Certificated airports have an additional aspect to this responsibility. They must address public protection in the context of part 139, a federal regulation, and, in some cases, other safety and security issues related to air carrier operations, as provided by part 107.

Inadvertent Entry

◆ Fencing ◆ Gate Access ◆ and ◆ The Psychology of an Attractive Airport

Airports are not public places in the sense that a person can go anywhere, anytime. Public protection is an important part of airport safety, and access to the airport must be controlled. If you have fencing and **gates**, controlling the use of the **gates** is essential. If you do not have fencing, **signs** that inform the general public about no entry points and/or remaining clear of aircraft operating areas must be effective. Because of the cost of fencing, it may be limited to strategic areas. Access to movement areas on your airport can also be controlled in other ways. These can make the airport an attractive and safe place for users and viewers alike. Roads that provide users with access to their hangars/tie-downs should have prominently placed signs to prevent inadvertent entry into areas that carry potential risks for non-aviation oriented visitors. Some of the methods, besides signs, that can be used to control access to the airside include

- Shrub/tree plantings (that are not wildlife attractants)
- Paths that guide people away from potential conflicts with aircraft
- Observation areas that invite people to watch aircraft operations from a safe vantage point

At part 139 certificated airports, airside access must be strictly controlled, as violations involving inadvertent entry are serious events. Fencing and control of gated access through permits or escorts are two effective means of preventing entry to unauthorized persons. Part 139.335 *requires* the airport to provide public protection. In addition, part 107 requires the airport to provide protections related to security. Together, these regulations are intended to ensure a safe environment for aviation operations.

What are the means of providing a "safe" airport environment at both certificated and non-certificated airports? The following can guide you in making an assessment of how well you protect your airport, the personnel whom you employ, and the users, tenants, and visitors.

Authorized Access Employee Access

◆ Limits/Conditions ◆ Training Requirements ◆ Currency

At airports where part 107 (the airport security regulation) requires an airport security plan (ASP), many aspects of access control are addressed, and while only portions of the airport are affected, secure areas are established and access to those portions is limited. On the other hand, at certificated airports, the requirements of part 139 regarding inadvertent entry also must be observed, and the force of both part 107 and part 139 can ensure that the airport establishes a basic, secure, public protection environment. Naturally, this affects a wider area of the airport.

Those persons who *are* authorized to have access to airside, at both certificated and non-certificated airports, should understand the nature of operating airside and be trained to conduct airside activities safely.

At non-certificated airports, airport operators should provide instruction to those who will have access to areas where aircraft operate. This is a matter of common sense and self-protection. At the larger non-certificated airports, procedures much like those at certificated airports can provide the appropriate level of protection and safety. The information below, while directed mainly toward certificated airports, can be helpful to everyone in airport management in assessing how well the airport protects itself and the people who work and visit there.

◆ Limits/conditions

Access to the airside of the airport is a privilege as well as a necessity for many airport users and personnel. Identifying and limiting user and employee access are basic tools in controlling activities at the airport.

At all airports, there are several groups of people who need access to airside areas of the airport. **Maintenance personnel** (mowers, snowplow operators, electricians, *e.g.)* and **construction personnel**, e.g., must get onto runways and taxiways, and into safety areas. Since these people perform a service for the airport, it is only logical and a matter of common sense that education about aviation operations and airport safety should be conducted for them. **User access**, associated with tenants or aircraft owners who require admission to specified areas on the airport are another group of people who should be instructed about rules and regulations of the airport. Many airports control user access by issuing permits or access codes through specified points of entry. Access roads are another method of preventing mishaps on the

movement area. Anytime the opportunity to circumvent the movement area or even the entire airside exists, it should be exploited. Separating vehicles from aircraft is always the easiest and best way to avoid incursions, collisions, and catastrophes. And when "inconvenience" is cited by those who see crossing the airport as expeditious, it is best to remind them that "if they think safety is expensive or time-consuming, they should try an accident."

At larger airports, and especially at certificated airports, access control is much more complicated; not only because of the numbers of employees involved but also because of the variety of reasons these employees need access to the airside.

Part 139 guidance is explicit about access to movement area: only those, whose jobs are essential on airside, should be permitted to operate. At towered airports, two-way radio communication is required. At non-towered airports, methods for controlling activities include prearranged signs and other forms of communication. Actually, at non-towered airports, the challenge is sometimes greater since the responsibility for ensuring safety falls completely on the person who is on the airside area of the airport.

◆ Training Requirements ◆ Currency

Training is key. As the airport operator, you should ensure that training reflects current operational procedures. Failure to inform and teach users or tenants about obsolete or amended procedures is an open invitation for mistakes. It is important to develop a system by which the rules and regulations for airside vehicular operations are kept current and information about them distributed in a timely manner. More importantly, if your tenants or others on the airport conduct the training, how do you control it? Have you established your approval authority for these programs? Not doing so may be your Achilles heel. Establishing guidelines, even requirements, for driver training programs that will be conducted on your airfield is not only reasonable but also prudent. Testing is another area that deserves your scrutiny. And recurrent training at specified intervals will keep everyone aware of the importance of driving safely on the airport.

Training Program Content

◆ Programs ◆ Tools ◆ Penalties

The airport is a dynamic environment. To prepare people for driving on an airport, a program that contains the operating rules as well as the rationale for those rules is basic. Some airports use videos to discuss aircraft and vehicle operations; others tailor a lecture to their airport's requirements; others use some of each approach. Whatever means you select, review it periodically to see if it needs updating or refreshing. And to maintain retention, test!

Training programs are designed to familiarize users with the airport

layout and the means of getting around the airport. However, low visibility and night conditions change a vehicle operator's perceptions of the airport. This should be taken into account when developing a training program for an airport with night operations or inclement weather conditions that limit visibility.

Some conditions on airports will be encountered nowhere else in a vehicle operator's experience. Jet blast, prop wash, and the necessity of limiting vehicle speed on airside are a few of them. Respect for safe operating practices must be cultivated, and one of the most effective ways to accomplish this is through incentives, and when this doesn't work, disincentives.

Getting lost (loss of situational awareness) on the airport is an opportunity for a runway incursion, as is miscommunications and complacency. **Airport diagrams** in vehicles can be very helpful to airport personnel. They can depict intersections with challenging geometrics or identify preferred routes; they can be color-coded or highlighted in some way, if necessary. Placards that contain **procedures and standard phraseology** as guides to ATC communications can serve as reminders to airport personnel that miscommunication is more easily avoided by adhering to terms that have specific meanings in the aviation environment.

Penalties for infractions may be handled in different ways. In some municipalities and counties, the local jurisdiction issues tickets for traffic violations. In other places, the airport develops its own program for addressing violations of the airport traffic rules and regulations. Infractions of security regulations (SIDA violations, e.g.,) may also be addressed through provisions of the ASP. Penalties must be enforced and the ultimate penalty, loss of airside privilege, should be publicized well beforehand, so that those with airside privileges respect the permits they have obtained.

Vehicle Requirements

◆ Inspections ◆ Types ◆ Airport Specific Issues

Vehicles that operate properly are a safety prerequisite. Inspection procedures should be clearly understood by all who have permits to operate airside. Do your airport personnel conduct vehicle inspections before operating any equipment? At some airports, a morning or "first use" inspection is used to identify equipment maintenance needs. Other airports use "surveillance inspections" to ascertain the status of tenant owned and operated vehicles. This is part of the agreement tenants should have signed for airside privileges/use.

Enforcement

◆ Rules and Regulations ◆ Violations ◆ Actions

The rules and regulations for vehicular operations on the airport should be clear and concise.

Vehicle operators should know the limits of their airside permits, if there are any. All vehicle operators should know, and be tested, on the airport's rules and regulations prior to operating airside. All vehicle operators should know the penalties for violations of the rules and regulations. Action by the airport management to acknowledge safe driving records as well as violations will make for a better environment on the airport. Incentives are powerful tools for preventing accidents. Disincentives will keep those who jeopardize everyone's safety off the airport.

QuarterlyVignette # 2

Here are two events that recently occurred on airports, as reported to FAA. #1 Contractors engaged in rehab efforts on the airport, especially those that require access to runways and taxiways, pose serious challenges to certificate holders. Part 139 requires airport operators to control and monitor construction activities, to ensure that conflicts like this one do not occur. #2 Some folks who just positively must get on the airport will find a way. Where gaps exist in fencing or where vegetation has been cleared, signs, saw horses, or some other impediment to airfield access should be used. In some cases, it is advisable to post personnel to ensure that inadvertent entry is prevented.

Grooving contractor vehicle crossed R/W 14 at intersection R/W 5/23 without authorization conflicting with
United Parcel Service B-757. UPS clearance was cancelled and held in position to avoid loss of separation.

What if the B-757 had not seen the vehicle or not heard the cancelled clearance? What if ATC had not been alert and seen the vehicle? This item on the Alert Bulletin might have had a different ending, if it hadn't been for a vigilant AT controller and a vigilant pilot.

A vehicle drove along the fence and entered Taxiway "F" without authorization. No conflicts reported.

No conflicts this time.....but what might happen the next time?

Runway Incursions by Month - CY 1999 (Through 11/15/99)

Month	OE/D	PD	V/PD	Total
May	7	20	2	29
June	8	13	7	28
July	8	24	7	39
August	8	16	1	25
September	11	17	7	35
October	7	13	2	22
November	5	15	2	22
Total May-Nov 15 '99	**54**	**119**	**28**	**200**
Total Jan-Nov 15 '99	**76**	**173**	**43**	**292**

Runway Incursions by Month - CY 1998

Month	OE/D	PD	V/PD	Total
May	5	12	5	22
June	16	9	7	32
July	5	14	4	23
August	9	14	5	28
September	7	24	7	38
October	7	17	6	30
November	11	19	6	36
Total May-Nov '98	**60**	**109**	**40**	**237**
Total Jan-Nov '98	**86**	**168**	**48**	**302**

NOTE: CY 1999 RI data is based on preliminary reports and is subject to change following final investigative results.

Legend

Runway incursion (FAA Order 8020.11A, Ch.1 Par 5): Any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in loss of separation with an aircraft taking off, intending to take off, landing, or intending to land,

OE = Operation Error, attributable to an incorrect directive from ATC
PD = Pilot Deviation, attributable to an incorrect action by a pilot entering a movement area without proper clearance
V/PD = Vehicle/Pedestrian Deviation, attributable to an incorrect action by a person in a vehicle or on foot who enters the movement area without proper clearance